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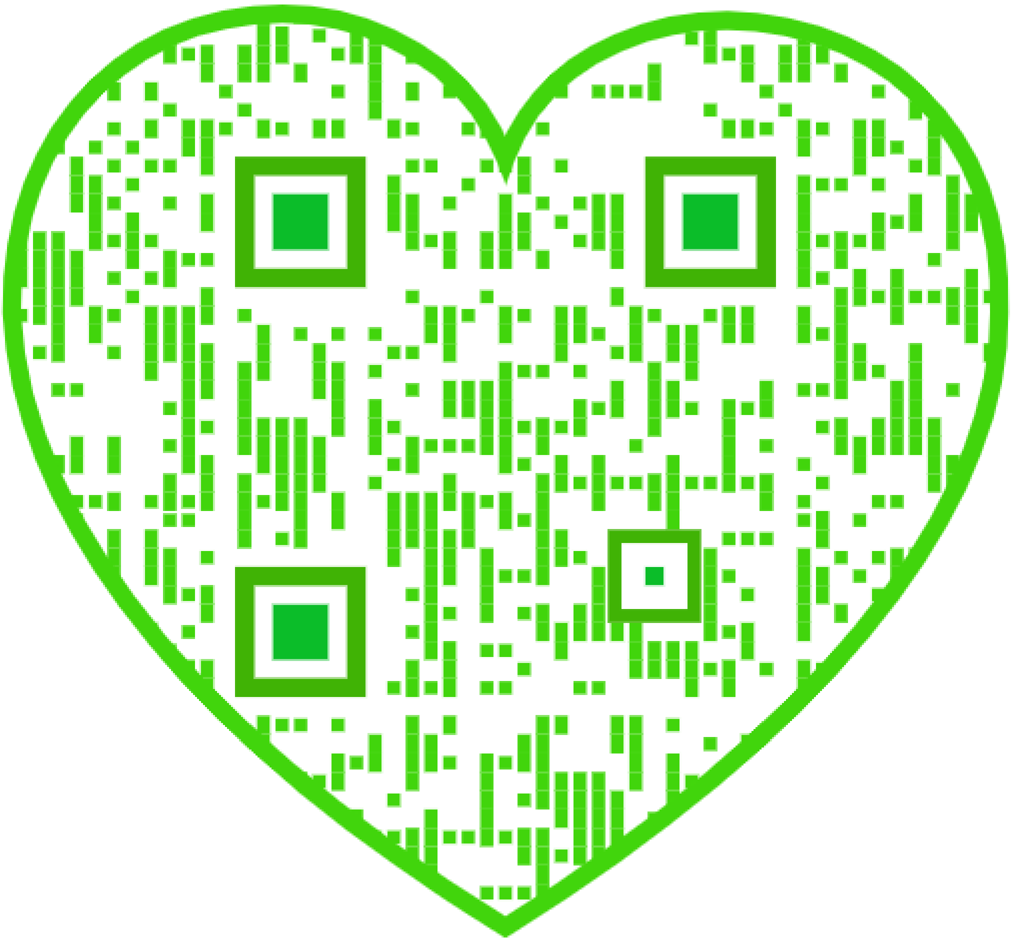

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AVIATION
RYANAIR: A DECADE OF GROWTH

On the cover

A Ryanair 737 ‘Gamechanger’ EI-IHA sitting on the stand seen through the window of another Ryanair 737.
Lee Spencer

Welcome

A very warm welcome to another edition of Aviation News!

As I write this, Cobra Warrior 25-1 has just kicked off in the UK, seeing some great multinational participation from Saudi Arabia, Turkey and France, all operating out of RAF Waddington for the two-week large force exercise. Only a couple of days in, we had USAF B-52Hs running some newsworthy Bomber Task Force operations out of RAF Fairford, performing live drops over European ranges and flying close to 24-hour missions near the Russian border.

I know we will all miss it, but the end is nigh for the USMC Harrier as the US branch announces its latest modernisation plan, seeing one of the remaining two units retire the jump jet in 2026 and the final squadron in 2028.

In the commercial world, ANA Holdings has made headlines by expanding its fleet and being the first to order the Embraer E190-E2 in Japan. Talking of fleets, United now boasts the largest airline fleet in the world after taking delivery of its 1000th aircraft.

I also wanted to make a mention to the beautiful Dash-7 as, during the shelf time of this issue, it will celebrate the 50th anniversary of its first flight. What a gorgeous looking piece of machinery!

This month we feature an exclusive chat with an RAF Typhoon pilot while he was taking part in the latest Red Flag exercise in Las Vegas. We also have some exclusive photos of the Philippine Mars as it takes its last flight to its final resting place. We head down under to fly with the Sydney Helicopters Group, who fight fires and more in the Australian bush. And Thomas Haynes looks into the huge ambitions of Ryanair as they aim to reach 300 million passengers per year in the next decade.

I am happy to bring back *AN*’s monthly *Over The Fence* column with a bang, as Chris Melaisi photographs target-towing F-5s at Meiringen in Switzerland. Enjoy!

Joe

Joe Campion, Editor

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United celebrates a thousand

UNITED AIRLINES has claimed it now has the largest commercial airline fleet in the world, following the delivery of its 1,000th mainline aircraft. The landmark aircraft, Boeing 737 MAX 9, N77584 (c/n 67624), was delivered to its Seattle/Tacoma hub on January 28, from nearby Boeing Field in Seattle. Senior VP Patrick Quayle wrote in a LinkedIn post on February 12: "We received delivery of our 1,000th mainline aircraft – and we're the first airline ever to do so. While [United] already hold the claim as the world's largest airline by available seat mile, we are now also the world's largest airline by fleet size." This is compared to 981 aircraft at American Airlines and 987 at Delta Air Lines.

Citing US Securities and Exchange Commission (SEC) filings and year-to-date deliveries, Quayle's post also noted that the Chicago-based airline had grown its mainline fleet by 263 aircraft since 2017, when it operated 750 aircraft. Using Cirium data, the post said United will fly to 368 destinations for the year ending July 2025, compared to 358 at American Airlines and 313 at Delta Air Lines.

At the time of writing, United's fleet further increased to 1,006 aircraft, comprising 81 Airbus A319-100s, 78 A320-200s, 31 A321neos, 530 Boeing 737s, 61 757s, 53 767s, 96 777s and 76 787 Dreamliners. It expects its fleet to grow to 1,054 aircraft by the end of 2025.

UNITED
N37522

One of United's Boeing 737-9 Max takes off from Anchorage, Alaska.
Note- This is not the 1000th aircraft. Charles Cunliffe

ANA places record order

JAPAN'S ANA Holdings Inc. (ANAHD) President and CEO, Koji Shibata announced on February 25 that following a board of directors meeting the company plans to place a company-record order of potentially 77 aircraft.

Due to the growth of tourism and passenger demand in Japan within the near future the company has placed a confirmed order of 68 aircraft and nine options for small and medium sizes aircraft. The order comprises Boeing 787-9 Dreamliners with General Electric engines to serve international routes and increase the available seat kilometres of ANA's international routes by 1.5 times the amount recorded in FY2023 by FY2030.

For ANA domestic routes, the company will order 20 Embraer E190-E2 aircraft, 15 of these orders are confirmed with an option for five more. This is the first Embraer E190-E2 order in Japan. The E2 is scheduled to be introduced into the ANA fleet from 2028. Additionally, ANAHD will place an order for 14 Airbus A321NEOs and up to 12 Boeing 737-8 aircraft, eight of the 737-8s are confirmed orders with an option for four more. ANAHD subsidiary, Peach Airlines will also supplement its current fleet with an order of 10 A321NEOs and three A321XLR aircraft. These orders, in addition to previous orders in process are due to take ANAHD's fleet size to approximately 320 aircraft by 2030, with approximately 120 787 series aircraft. Shibata said:" This order will be the catalyst for improving the profitability of domestic flights and the expansion of international flights which is an area of future growth of our airline business. We will fully utilize this opportunity in order to become an industry-leading airline with sustainable growth."

Embraer
ANA Inspiration of JAPAN
ANA

Boeing 777X in the Caribbean

ON FEBRUARY 11, Boeing took the 777X programme to the Caribbean Island of Curaçao for testing in a hot and humid environment. Following a 7 hour and 25 minute flight from King County International Airport – Boeing Field (BFI/KBFI), the new-generation widebody WH002 landed at Curaçao International airport (CUR/TNCC) just after sunset. The Seattle-based manufacturer conducted daily flights from the island until February 23 for engineers to assess the aircraft's performance.

Patrick Lalande

Pratt and Whitney powered A321XLR gains EASA certification

AIRBUS ANNOUNCED on February 21 that the European Union Aviation Safety Agency (EASA) had issued the type certificate for the Airbus A321XLR powered with Pratt & Whitney GTF engines. This certification will allow the first customer aircraft with the engines to enter service later this year. Christian Scherer, CEO of commercial aircraft at Airbus, said: "The A321XLR already displays its great versatility crossing the Atlantic in daily operations. With the certification and entry-into-service of the GTF-powered A321XLR, we will see more operators introduce this game-changing aircraft. It is also good news for our customers' passengers, who will benefit from the convenience of new direct city-to-city connections with a heightened level of cabin comfort."

The A321XLR entered service in 2024 and Airbus already has more than 500 orders for the type.

Airbus

EASA certification for E-freighter

EMBRAER'S E-FREIGHTER, the E190F, has been fully certified by the European Union Aviation Safety Agency (EASA) and is now set for global operations. Certification from the US Federal Aviation Administration (FAA) and the National Civil Aviation Agency of Brazil (ANAC) were achieved in 2024.

The E-Freighter programme began in 2022 and it first flew in April 2024, followed shortly after by its first public appearance at the Farnborough Airshow in July. The aircraft was created to fill a gap in the air cargo market and to replace older, less efficient models. According to Embraer, E-jets converted to freighters will offer 40% greater capacity, three times the range of large cargo turboprops and up to 30% lower operating costs than larger narrowbodies. The maximum structural payload for the aircraft is 13,500kg.

The São Paulo-based manufacturer derived the E-freighter from its popular E190 regional jet. Martyn Holmes, chief commercial officer of Embraer commercial aviation, said: "EASA certification is a key milestone in our passenger-to-freighter conversion programme. This is an exciting market and we have developed the perfect aircraft to fill the gap, meeting the demand globally for faster deliveries, not just to metro areas, but all regions. The E-Jets are a global success with a large footprint worldwide, we are now ready to offer the highest standard of freighter solution to customers globally."

TAAG's first 787 delivered

ANGOLA AIRLINES

Boeing

LUANDA-BASED TAAG Angola Airlines has taken delivery of its first Boeing 787-9 Dreamliner, D2-TEQ (c/n 66877), as part of its ongoing fleet modernisation efforts. The widebody, which arrived in Luanda on January 30, 2025, is the first of four Dreamliners set to join the airline and is the first in its fleet to wear TAAG's new livery.

Originally built for MIAT Mongolian Airlines, the aircraft was rolled out in the carrier's colours before being repurposed as a Boeing demonstrator. It was registered N8572C and painted in start-up carrier Riyadh Air's purple livery from June 2023 until October 2024, making appearances at both the Paris Air Show and Dubai Airshow in 2023. The aircraft first flew on May 17, 2022, and was later ferried from Everett/Paine Field to Luanda on January 29, 2025. It has yet to enter service with TAAG.

Nelson Pedro Rodrigues de Oliveira, TAAG's chief executive officer, said the addition of the 787-9 is a pivotal step in modernising the fleet, enhancing efficiency and versatility and improving the passenger experience. The airline said the Dreamliner's 25% lower fuel consumption and CO2 emissions will contribute to its long-term sustainability goals.

TAAG currently operates a 25-strong fleet comprising five Boeing 777-300ERs, three 777-200ERs, eight 737-700s, one 737-800, six De Havilland Canada DHC-8-400 turboprops and a sole Airbus A220-300. It serves 12 destinations across Africa, Europe, South America and China, and plans to use the 787-9 for new long-haul routes to Europe, Asia and North America.

American Airlines Intercepted

ON FEBRUARY 23, American Airlines flight 292, A Boeing 787-9 Dreamliner (N840AN) took off from New York's John F Kennedy Airport for Indira Gandhi International in New Delhi, India.

As flight 292 was over the Caspian Sea the aircraft diverted mid-flight and headed to Rome's Leonardo da Vinci Fiumicino Airport due to an apparent security threat, which was reported as an apparent bomb threat received by email, but also later confirmed by the airline to be "non-credible".

As the 787-9 entered Italian air space it was escorted to the airport by two-armed Italian Air Force Eurofighter F-2000As that were on Quick Reaction Alert (QRA) duty. The Eurofighters were given the call to intercept the Dreamliner at around 1600pm local time from the Combined Air Operations Centre in Torrejon, Spain. The 787-9 landed safely without any issues in Rome at approximately 1730 local time.

Aeronautica Militare

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Dash-7 celebrates half-a-century

ON MARCH 27, the de Havilland Canada Dash-7 (DHC-7) will celebrate 50 years since its maiden flight. The turboprop short take-off and landing (STOL) capable aircraft has served military and commercial operators all over the world since 1978. The type continues to operate in various locations. Air Tindi, a Yellowknife, Canada, operator continues to operate a fleet of the Dash-7, while the British Antarctic Survey operate a single Dash-7-100 to run personnel and cargo to and from the Falkland Islands.

Thomas Singfield

A350F deliveries slip

AIRBUS HAS pushed back the entry into service of its A350 freighter from 2026 to the second half of 2027. The news was revealed during the Toulouse-based manufacturer's full-year financial results briefing on February 20.

Specific supply chain challenges, notably with Spirit AeroSystems, are currently putting pressure on A350 and the A220 production. Spirit supplies aerostructures to Boeing and Airbus, including the central fuselage section of the A350, but the Wichita-based firm is currently undergoing a restructuring following Boeing's decision to purchase the company, a process which will involve separating the Airbus operations.

Airbus CEO Guillaume Faury said the first flight-test A350F would enter the final assembly line this year, and that the airframer is continuing to target a ramped-up production rate of 12 A350s per month in 2028. It has firm orders for 63 A350Fs, with 60 attributed to ten identified customers.

First Qantas A321XLR breaks cover

QANTAS
Spirit of Australia
D-AXXE

Dirk Grothe

THE FIRST of 28 Airbus A321XLRs ordered by Qantas has left the paint shop at Airbus' Hamburg/Finkenwerder facility emblazoned in the flag carrier's full livery. The jet, which currently still wears its test registration, D-AXXE (c/n 12323), will be registered VH-OGA, and named *Great Ocean Road*. Seen here on February 15 without its engines, it is due to be powered by Pratt & Whitney PW1133GR-JM powerplants, the same as those selected by Wizz Air for its XLRs. Qantas will operate the XLR to destinations in Southeast Asia and the Pacific Islands, replacing the Boeing 737 over the next decade. Delivery of the first aircraft is expected in April 2025.

Boeing delivers 100th 767 freighter

BOEING ANNOUNCED on February 20 that it had delivered the 100th 767-300 Boeing converted freighter to SF Airlines of China.

The aircraft with serial N348AE and a special emblem on the nose to commemorate the 100th delivery was unveiled on February 14 at Guangzhou Aircraft Maintenance Engineering Company Limited facility where it was converted into a freighter.

Boeing

Loganair's worlds first plans

Loganair

GLASGOW-BASED Loganair has laid out plans to deliver the world's first hydrogen-powered commercial flights within the next five years. The airline said it had identified several routes from Orkney that would be perfect for hydrogen-fuelled services. The next phase of the project is to test the necessary infrastructure required to operate the services in the long term.

For this, Kirkwall Airport has been chosen as a test site to explore how hydrogen infrastructure could be rolled out at airports across Scotland. As part of the Sustainable Aviation Test Environment (SATE), it has already been working with project partners, including Highlands and Islands Transport Partnership (HITRANS), Highlands and Islands Airports (HIAL), AGS Ltd, the European and Marine Energy Centre (EMEC) and Orkney Islands Council on the first phase of the project.

Additional funding has now been secured from the UK Civil Aviation Authority (CAA) as part of the Hydrogen Challenge to enable further testing and the development of "necessary building blocks to allow the use of commercially viable hydrogen aircrafts."

Rebecca Borresen, director of safety and sustainability, said the airline was working hard with key industry partners on a range of sustainable flight initiatives. This includes collaborating with Swedish firm Heart Aerospace on a hybrid-electric propelled aircraft. The ES-30 will have the capacity to carry 30 passengers on fully electrified flights of up to 124 miles.

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USMC Project Eagle

Aviation News

THE US Marine Corps recently completed an annual review of its aviation forces and, on February 3, the deputy commandant for aviation released the 2025 Marine Aviation Plan. The updated roadmap makes several changes to earlier plans created and updated under Force Design 2030, writes **Tom Kaminski**.

Changes that will be implemented during the next three Future Years Defense Programs (FYDP) were identified under an associated strategic review, known as Project Eagle. The modernisation strategy prioritises distributed aviation operations (DAO) and decision-centric aviation operations (DCAO) that will permit the service to maintain operational effectiveness in contested environments.

The biggest change in the aviation plans modifies the roadmap for F-35B and F-35C fielding. Although the service is not making changes to the total number of Lightning IIs it will acquire, it is adjusting the variant mix and overall distribution. The service had previously planned to field 16 active and reserve component F-35B squadrons and four active-duty F-35C squadrons, procuring 353 F-35Bs and 67 F-35Cs. In accordance with the latest TACAIR Transition Plan, two additional active-duty squadrons will receive the F-35C carrier variant, along with two reserve squadrons. As a result, the procurement mix will now comprise 280 F-35Bs and 140 F-35Cs.

Rather than transitioning to the F-35B, Marine Fighter Attack Squadrons VMFA-232 and VMFA-323 will move from the F/A-18C/D to the F-35C beginning in 2030. Marine Corps Reserve squadron VMFA-112 will follow in 2031 and VMFA-134 will be reactivated the same year. Ten additional F-35Cs will support training requirements. Three squadrons have already received F-35Cs and VMFA-115 will become the fourth when it is reactivated at MCAS Cherry Point, North Carolina, in 2027. Additionally, the service has begun standardising the Lightning II squadrons with 12 primary aircraft. In line with that plan, VMFA-121 and VMFA-242 at Marine Corps Air Station Iwakuni in Japan reduced their complement from 16 aircraft to 12 F-35Bs during 2024. The rest of the squadrons will see their inventory increased from ten aircraft to 12 between 2030 and 2035. The fleet currently includes 39 AV-8Bs and 161 F/A-18C/Ds that will be retired in 2026 and 2030, respectively. The remaining AV-8B squadrons, comprising Marine Attack Squadrons VMA-231 and VMA-223 at MCAS Cherry Point, North Carolina, will transition to the F-35B in 2026 and 2028. By the end of 2025 the Marine Lightning II inventory will comprise 183 F-35Bs and 52 F-35Cs. (You can read more about Project Eagle in the April issue of our sister publication, *Combat Aircraft Journal)*

USAF B-52s in the UK

US CENTCOM

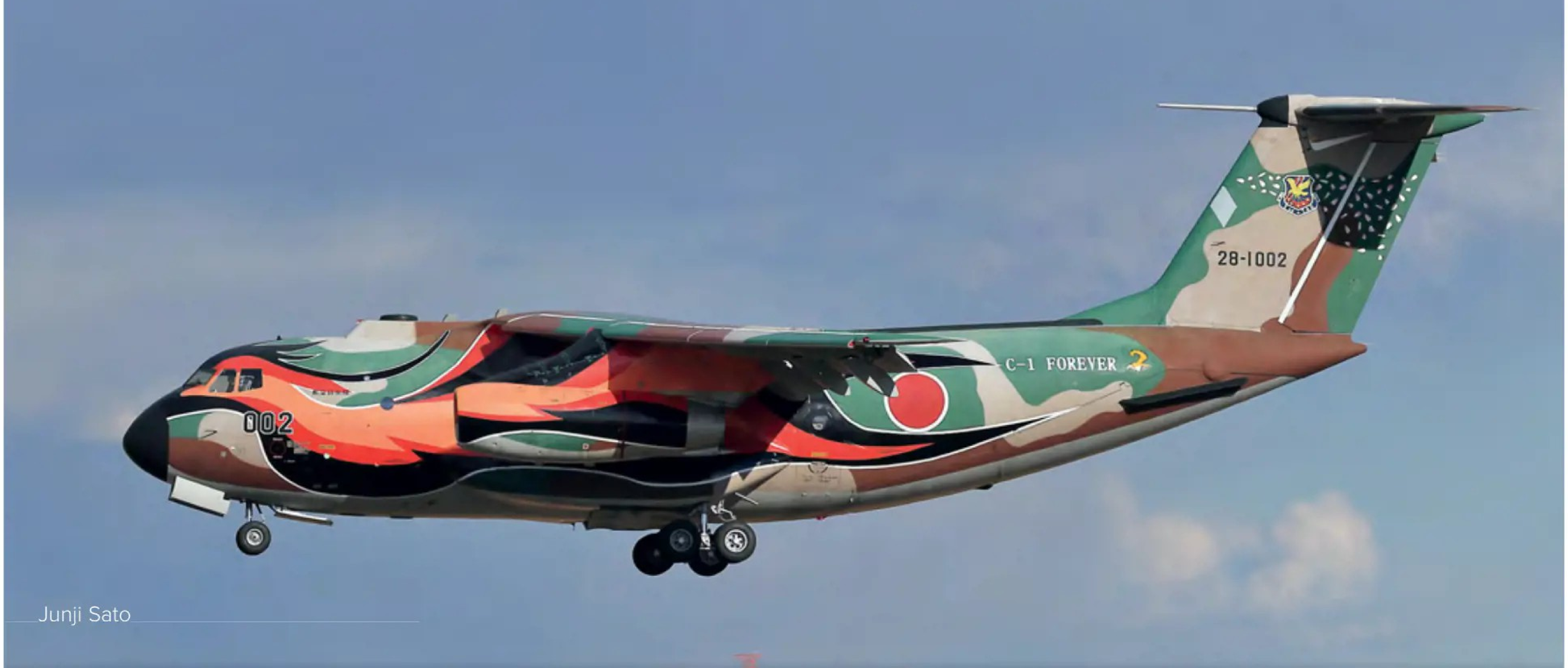
USAF B-52H Stratofortress bombers arrived in the UK between February 11 and 15. Callsign Slide 11/12 arrived at RAF Fairford on February 11, with Ramp 21 and Ramp 22 arriving on February 13 and 15. The B-52s are in the UK for a scheduled Bomber Task Force (BTF) deployment.

The four B-52Hs are from Minot AFB, North Dakota, and assigned to the 69th Expeditionary Bomb Squadron. It was reported by USAFE that, on February 17, two of the bombers participated in a US Central Command mission in the Middle East to project force capabilities in the region which lasted almost 24 hours.

The two bombers flew across Europe from Fairford using the callsign GRIM, travelling through nine partner nations. The mission included aerial refuelling; live munition drops at ranges in several partner nations. USAF F-15E Strike Eagles, Iraqi Air Force F-16IQ Vipers and three other partner nation aircraft types escorted the bombers during the mission.

Gen Michael Erik Kurilla, commander of CENTCOM, said: "Bomber Task Force missions demonstrate US power projection capability, commitment to regional security and the ability to respond to any state or non-state actor seeking to broaden or escalate conflict in the CENTCOM region,"

Kawasaki C-1 'Phoenix' takes to the skies



Junji Sato

ON JANUARY 30, the Japan Air Self-Defence (JASDF) Force's Iruma Air Base unveiled on SNS a specially painted second prototype of the Kawasaki C-1 transport aircraft (28-1002). All Kawasaki C-1 transport aircraft are scheduled to be retired at the end of March 2025, and this design was based on the motif of a phoenix and depicts the aircraft's desire to 'keep flying forever', writes **Junji Sato**.

After repeated engine tests, C-1 performed a taxi run on February 3. Finally, on February 5, the Phoenix, pictured, took to the skies, and until its retirement at the end of March, it is scheduled to visit other JASDF bases besides Iruma Air Base on a 'thank you flight'.

The C-1 is a Japanese domestic medium-sized transport aircraft developed by Nippon Aircraft Manufacturing (NAMC), which developed the YS-11, the first domestic post-war passenger aircraft, together with the Technical Research Division of the current Ministry of Defence and manufactured by Kawasaki Heavy Industries with two Pratt & Whitney JT8D engines.

Production starts on Austrian C-390

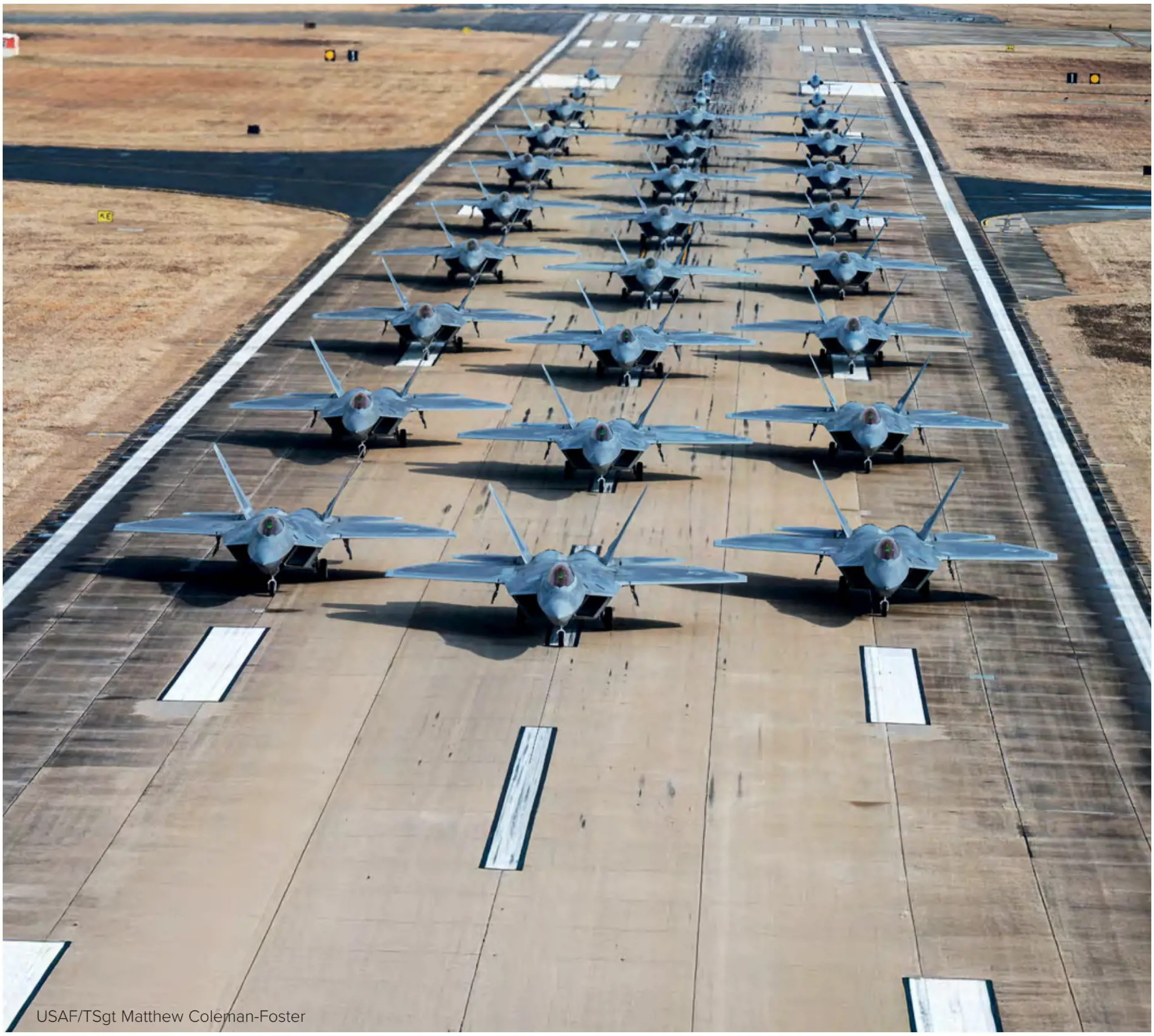
EMBRAER DEFENCE and Security announced on February 14 that it had commenced the structural assembly of the first C-390 Millenium for Austria. The milestone took place during a ceremony at Embraer's facility in Gavio Peixoto, Brazil, which was attended by members of the Austrian government.

Austria ordered four of the airlifters in the summer last year as part of the 'Replacement of Tactical Airlift Capacity' project to replace its ageing Lockheed Martin C-130K fleet.

"We're thrilled to start production of first aircraft for Austria and we look forward to delivering the first aircraft to the Austrian Air Force soon. The C-390 is setting new standards as a medium airlift, truly multi-mission aircraft. It offers an unbeatable combination of the latest technology, reliability, and low operational costs, with unmatched performance," said Bosco da Costa Junior, President and CEO of Embraer Defense & Security.

Embraer

F-22 Elephant Walk



USAF/TSgt Matthew Coleman-Foster

AIRCRAFT FROM the 1st Fighter Wing (FW) conducted an elephant walk at Langley Air Force Base, Virginia, showcasing the wing's readiness and operational agility and also creating a unique and impressive sight of aircraft running on the airfield's runway. This demonstration highlighted the wing's capability to mobilize forces rapidly in high-stress scenarios. The wing's fleet includes F-22 Raptors and T-38 Talons.

JASDF Chinook Order

ANNOUNCED FEBRUARY 13, the Japan Self-Defence Forces (JSDF) ordered 17 CH-47 Block II Chinook Extended Range (ER)s from Boeing. This order is to modernise its fleet and replace some of its current CH-47 JA Chinooks. The 17 new Block IIs will be co-produced by Boeing and Kawasaki Heavy Industries (KHI). Since the 1980s, Boeing and KHI have delivered over 100 Chinooks to the JSDF, making it one of the longest lasting and most successful licence manufacturing programmes in Japan. Joining the US, UK and Germany, Japan is now the fourth global customer of the advanced configuration of the CH-47.

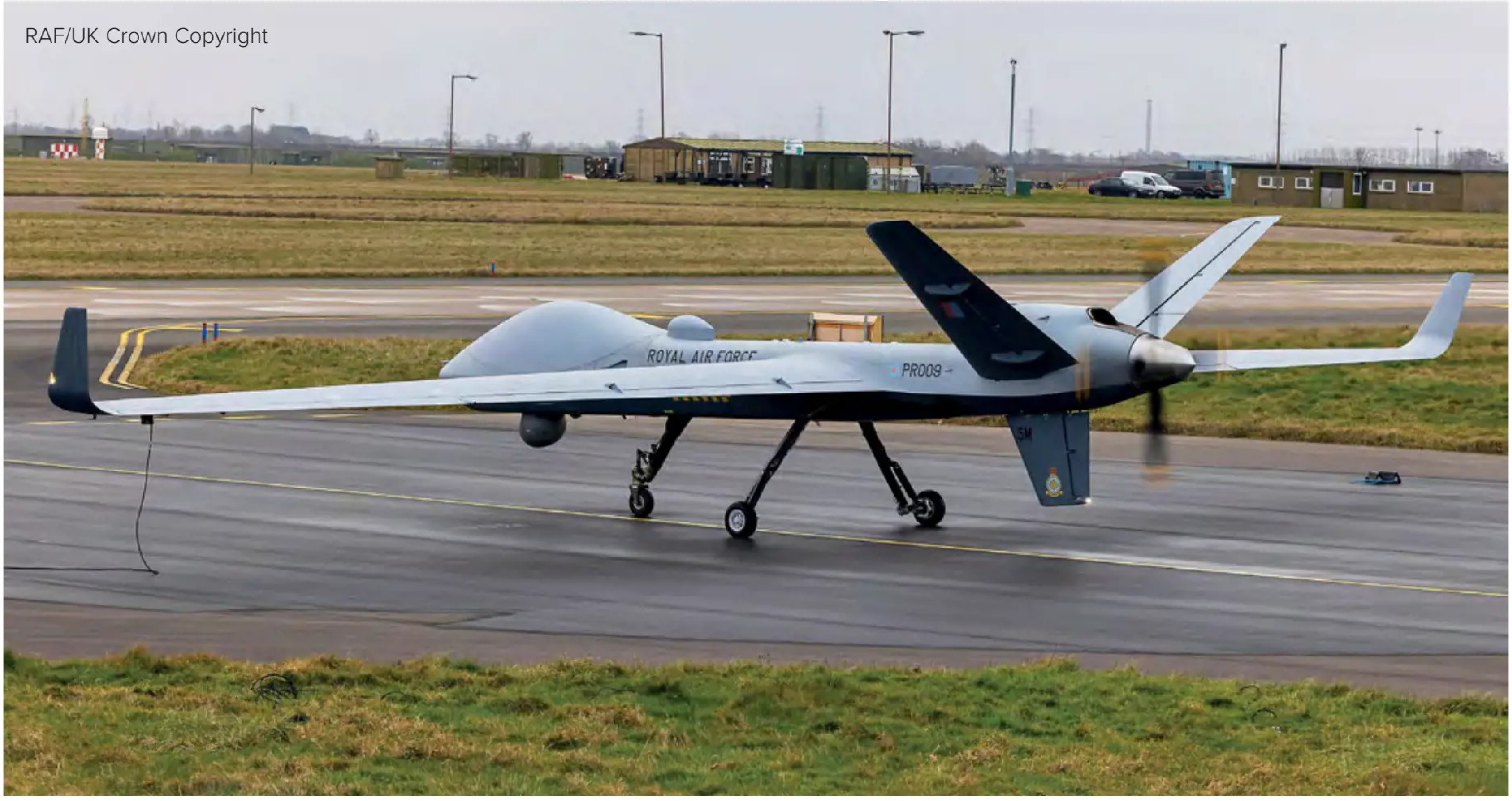
"This award strengthens our decades-long relationship with KHI and provides critical capability improvements that will keep the Japan Self-Defence Forces operating heavy-lift aircraft for decades to come," said Heather McBryan, vice president and program manager, Boeing Cargo Programs. "The Block II configuration and digital flight controls will modernize and significantly improve Japan's helicopter transport capabilities by improving aircraft stability, safety, and efficiency."

Ukraine receives Mirage 2000s from France

THE FIRST batch of upgraded ex-French Air and Space Force (FASF) Mirage 2000-5F multi-role fighters was delivered to the Ukrainian Air Force (UkrAF) on February 6 – following the successful completion of a six-month training course for UkrAF pilots (pictured) and ground crews at Nancy-Ochey Air Base (AB) by late December 2024. Although confirmed by French and Ukrainian officials, the number of aircraft – both in this first batch and in total – remains undisclosed (reported as three and 12-20 respectively by unofficial sources), writes **Vladimir Trendafilovski.**

Image of UkrAF Mirage pilots: FASF

RAF Protector milestone



RAF/UK Crown Copyright

THE RAF performed the second UK flight of the protector RG1 with an all-UK crew flying the Remotely Piloted Air System (RPAS). The RPAS was flown from the RAF ground station building at RAF Waddington in Lincolnshire.

The flight was announced by the RAF on February 12, though it took place on February 7. The Protector flew from the home of the service's intelligence, surveillance targeting and reconnaissance (ISTAR) force as part of Phase 3 flight activities for the RPAS – the test and evaluation programme prior to full service with the RAF.

The RPAS lifted off from the runway at Waddington and completed two circuits before landing. The air vehicle taxied back and was used as a backdrop for a group photo to celebrate the second test flight.

The flight involved Protector RG1 PR009 and was completed under the supervision of 56 (Test & Evaluation) Squadron with support from the other two RAF Protector units, 31 and 54 Squadrons. The RPAS was coded 'SM' and carried the marking of 31 Squadron – 'the Goldstars' – including the unit badge on the ventral tail and its yellow and green checks on the forward lower fuselage in a continuous stripe, uninterrupted by the roundel. Protector PR009 was the first example delivered to Waddington in September 2023, the RAF now has four Protectors in the UK and three in the USA. **David Willis**

UK hosts ex Cobra Warrior

FEBRUARY 24, UK Led exercise Cobra Warrior 25-1 commenced at RAF Waddington, Lincolnshire. Cobra Warrior is a two week-long multinational training exercise which saw foreign participants arrive the week prior to the exercise.

The French Air and Space Force participated with three Dassault Rafale Bs of 1/4 Gascogne which are home stationed at Saint Dizier. The Royal Saudi Air Force brought over six F-15SAs from 6 Squadron and the Turkish Air Force flew over three F-16C/Ds from 182 Filo.

Various airlifters acted as support aircraft to the participating fast jet units seeing multiple A400Ms from both the French and Turkish Air Forces arrive at Waddington. A C-130H of the RSAF also arrived at Waddington, providing support for the RSAF F-15SAs.

Key/ Ben Stanley Hall

Development on France's next Maritime Patrol machine

AIRBUS DEFENCE and Space signed a contract on February 4, to undertake a risk assessment study for France on a future maritime patrol aircraft (MPA), the A321 MPA to replace the French Navy's current Atlantique 2 fleet by the 2030-2040 timeframe.

The contract was awarded by the Direction Générale de l'Armement, the French defence procurement agency. Work will be completed over 24 months and follows a recently concluded architecture and feasibility study launched at the end of 2022.

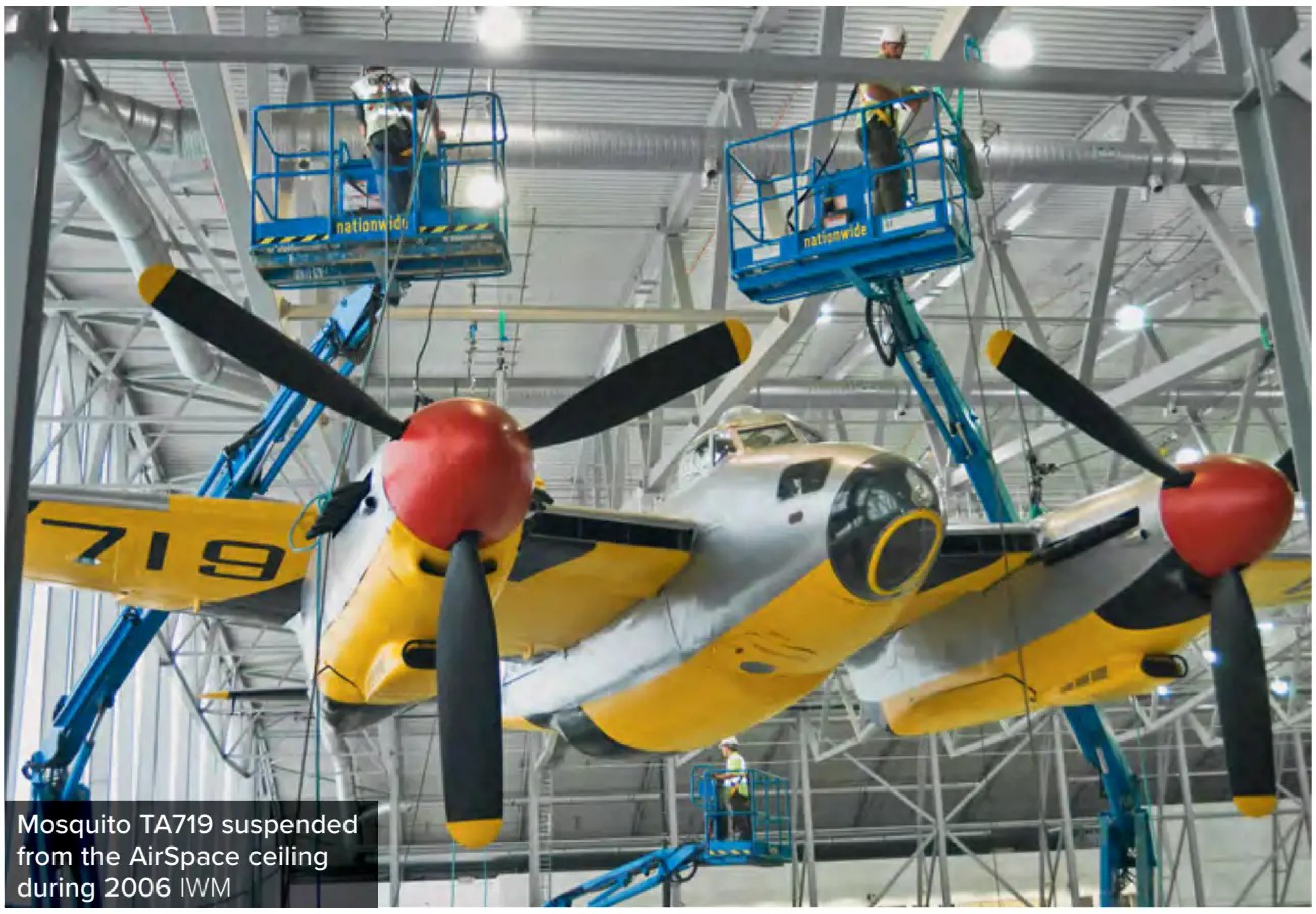
The A321 MPA is a militarised variant of the A321XLR and according to Jean-Brice Dumont, executive vice president, head of air power at Airbus Defence and Space: "The A321 MPA has all the assets to become a true flying frigate capable of responding to the wide range of missions entrusted to the French maritime patrol. Airbus offers a sovereign solution that provides the autonomy, availability and reliability required to contribute to the oceanic component of the nuclear deterrence."

The new definition study and risk assessment contract is expected to lead to the launch of development and production of the maritime patrol aircraft towards the end of 2026. Economic and industrial issues will be addressed during the study, along with identification of systems that need to be integrated on the platform. It will also involve initial wind tunnel trials of the proposed configuration of the aircraft.

The A321 MPA is due to boast a long range and high manoeuvrability capability, including at low altitude. The aircraft will also be armed with torpedoes, depth charges and air-to-surface missiles in its maritime warfare roles. **David Willis**

Airbus Defence and Space

Large aircraft movements begin at Duxford



Mosquito TA719 suspended from the AirSpace ceiling during 2006 IWM

MAJOR CHANGES are under way this year within Imperial War Museum (IWM) Duxford's vast AirSpace hangar, home to such exhibits as Concorde 101 G-AXDN and Avro Vulcan B.2 XJ824.

As the next phase of the long-term Transforming IWM Duxford project, the conservation team is preparing AirSpace to become a permanent Cold War and Contemporary Conflict exhibition. Most of the aircraft currently suspended from the ceiling, including de Havilland Mosquito TT.35 TA719, will be brought down.

Jon White, IWM's head of conservation, described the undertaking as "no easy task", explaining that it entailed "months of careful co-ordination and meticulous planning" to complete more than 100 aircraft movements. "There is no 'one size fits all' approach," he added. "The individuality of each aircraft has to be taken into consideration, including its size, weight, material and age."

IWM promises that new exhibition spaces will be created over the next decade, 'putting IWM's unique collection of aircraft and military vehicles centre-stage and allowing visitors to discover more about the people who designed, built, flew, drove and repaired them'. Due to the changes, AirSpace will be closed on 13 dates in March, April and May – see iwm.org.uk/events/airspace

Ready 4 Duty to visit Europe

TO COMMEMORATE the 80th anniversary of VE Day, Douglas R4D-6S *Ready 4 Duty*, operated by the Dallas Wing of the Commemorative Air Force, will undertake a transatlantic journey from Texas to Europe this spring and summer.

The 1944-built aircraft, a US Navy version of the DC-3 and the last of its kind still flying, will fly a 12-week, 12,000-mile Navy to Victory Tour, including appearances across the US, Iceland, the UK, France and the Netherlands from April through to July. "Safely operating an 80-year-old aircraft for such an extended journey is no mean feat," said tour co-ordinator Christopher Volpe, "but helping to build a lasting legacy for veterans makes all of the preparations and sacrifices worth it. The window to honour these men and women while they're still with us is closing rapidly."

NAVY
50783
R4D-6S
Ready 4 Duty

R4D-6S 'Ready 4 Duty' will visit Europe this year Karolina Marek via CAF

Buchón to fly with German warbird collection

Pictured in 2019, Buchón OO-MAF is now part of Georg Raab's collection FAST Aero via S Schmoll

GEORG RAAB's Siegerland, Germany-based Flying Legends collection has recently been expanded to include Hispano Ha-1112 Buchón C.4K-131 OO-MAF.

Georg acquired his new charge from the Vormezeele family in Brasschaat, Belgium. The late Eric Vormezeele bought the aircraft in 1985, and it's been owned by the family until recently. Eric's sons Frédéric and Alexandre run maintenance and restoration business FAST Aero – the company will continue to work on the currently disassembled Hispano for the next two years.

While full details have yet to be confirmed, the Buchón will be repainted to represent a German Messerschmitt Bf 109. flying-legends.eu **Stefan Schmoll**

Major Flexjet order for Embraer business jets

One of Flexjet's Praetor 600s, G-FHFX seen on approach Rod Simpson

FRACTIONAL OWNERSHIP provider Flexjet, which has served business aviation since 1995, has consolidated its relationship with Embraer with a new agreement valued up to USD $7bn. This includes a firm order for 182 Phenom and Praetor business jets (plus 30 options) and enhanced services and support facilities. This order establishes Flexjet as Embraer's first fleet customer for the Praetor and includes the improved Phenom 300E. While Flexjet also operates other types including the Gulfstream 450 and 650 and the Bombardier Challenger 350/3500 it has a long-standing relationship with Embraer, having been the launch customer for the Legacy Executive, Phenom 300, Legacy 450 and the Praetor 500/600.

This order is set to almost double FlexJet's fleet over the next five years. Michael Silvestro, CEO of Flexjet said: "Both the Praetor 500 and 600 are high performers in the Flexjet fleet. In fact, the Praetor 600 was so well accepted in Europe, we opted to include it in our North American fleet in 2023, extending our Embraer fleet across two continents. And as the first fractional provider of the Praetor 500, our maintenance technicians and our pilots are intimately familiar with the aircraft and are looking forward to the continued growth of this fleet."

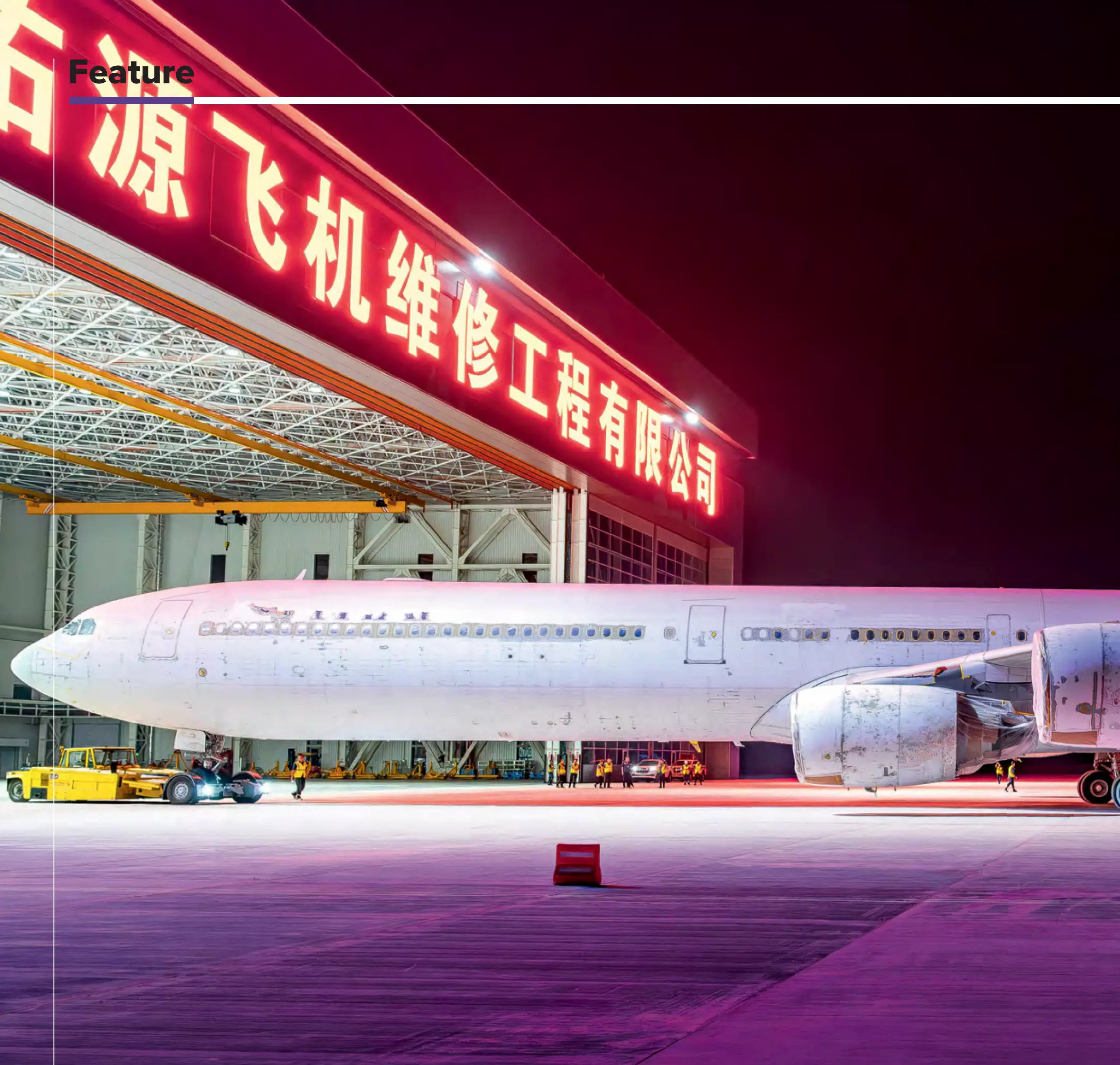
Final Gulfstream G650

An example of the G650 seen at Farnborough Airshow in the UK. Note this is not an image of the final Gulfstream G650. Rod Simpson

GULFSTREAM AEROSPACE announced on February 12 that the last of 598 Gulfstream 650s has been completed and was due for early delivery. It is reported the G650 fleet recently passed a million flight hours. The final aircraft moved on to the next phase of completion process at Gulftsream's Appleton, Wisconsin, facility before being delivered to its customer later this year.

Gulfstream is replacing the popular G650 business jet with the new 19-passenger Gulfstream G800 which is approaching type certification. The G800 powered by a pair of Rolls-Royce Pearl 700 turbofans has a range of 8,000nm at Mach 0.85. It is equipped with the advanced Gulfstream Symmetry Flight Deck together with a new Combined Vision system.

President of Gulfstream, Mark Burns said: "Beyond the program's innumerable accolades and 125+ world speed records, innovations introduced with the form, fit and precision manufacturing process of the G650 laid the groundwork for today's next-generation Gulfstream fleet."



▲ '2-STNA', the former Thai Airways' A340-642 (HS-TNA) being towed into a maintenance hangar at Taiyuan airport to be painted in an overall white livery Chen Taoran

After a decade of serving the Thai Airways' long-haul fleet, the fate of the Airbus A340s was uncertain upon retirement. The airline first introduced the Airbus A340-500, known for its long-range capabilities that catered well to intercontinental routes with high passenger demand, in 2005. Over time, Thai Airways expanded its A340 fleet with a combination of A340-500 and A340-600 models, primarily operating on long-haul routes to Europe, North America, and Australia. However, economic challenges, advancements in aircraft technology, and evolving aviation trends led to the gradual retirement of these aircraft between 2012 and 2015.

A340-541

Nicknamed 'Groundhog' by many of its operators, the A340 was designed for ultra-long-haul routes and offered greater redundancy with four engines, while the A330 was considered more fuel-efficient than the A340 due to its twin-engine design. The A340-500, the longest-range version of the A340, offered a range of around 9,000nm, which was significantly higher than that of the A330-300 with a maximum range of 6,340nm.

When the A340-500 was incorporated into Thai Airways' fleet, it was the longest-range commercial airliner in the world. Its first flight took place on February 11, 2002, and it received certification on December 3, 2002. Air Canada was initially set to be the launch customer, but after filing for bankruptcy in January 2003, the delivery was delayed until July 2004. This opened the door for Emirates to become the new launch customer, enabling the airline to begin non-stop service from Dubai to New York, its first route to the Americas.

The A340-500 has a capacity of 313 passengers in a three-class configuration. In comparison to the A340-300, the A340-500 features a fuselage stretch, a larger wing, a significant increase in fuel capacity, a slightly higher cruising speed, and a

A New Life

Babak Taghvaee reviews the career and the ultimate fate of Thai Airways' fleet of Airbus A340, replaced in service by the dual engine Boeing 777 Extended Range models

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larger horizontal stabilizer and vertical tailplane. The main landing gear was upgraded to a four-wheel bogie to support the increased weight.

The A340-500 struggled to gain popularity with customers. Its low passenger capacity, combined with the heavy structural elements inherited from the A340-600, led to perceptions of inefficiency. Additionally, operating in the ultra-long-haul market proved challenging due to the substantial fuel requirements for such long flights, making profitability difficult to achieve in this niche segment.

A total of four A340-541s were ordered by Thai Airways. The aircraft (MSN 624, 628, 698 and 775) logged their first flight on February 7, April 14, September 13, 2005, and October 10, 2006, respectively. These aircraft, HS-TLA, HS-TLB, HS-TLC and HS-TLD were delivered between 2005 and 2007.

The four A340-541s had a cabin seating configuration of 60 business class, 42 for premium economy and 113 economy seats. They were used by Thai Airways for Intercontinental flights between Bangkok and New York, and then Los Angeles from December 2, 2005. These A340-541s also flew to Auckland, Kuala Lumpur, Milan, Melbourne, Oslo, Singapore, Sydney, Tokyo and Zurich.

Airbus A340-642s, the largest of its kind

In addition to the four A340-500 fleet, Thai Airways acquired six A340-642s from Airbus. The variant was stretched to 75.4m (247ft), then the longest airliner, to accommodate 320 to 370 passengers over 7,800nm of range. The longer length of the aircraft combined with more powerful engines allowed it to carry more passengers and cargo but at the cost of having slightly shorter range compared to shorter A340-500 series aircraft.

The A340-600 was designed to compete with the earlier Boeing 747-200/300 models. The 600 offered a similar passenger capacity to the 747, but with 25%

▶ Three A340-541s of Thai Airways, including HS-TLA, in storage at Don Mueang International airport, Bangkok Jean Marc Braun

▼ The first A340-642 of Thai Airways, 'HS-TNA' (from June 30, 2005 to March 28, 2015) landing at Zurich on May 18, 2013 Bruno Geiger

more cargo space and lower operating costs per flight and per seat. Its first flight took place on April 23, 2001, and Virgin Atlantic launched commercial services in August 2002. The primary competitor to this model is the 777-300ER and more recently, the Airbus A350 series.

The six A340-642s of Thai Airways (MSN 677, 681, 689, 710, 719 and 953) logged their first flights at Toulouse, France, throughout 2005 and one three years later in 2008. They received HS-TNA to HS-TNF registration codes and 'Watthana Nakhon', 'Saraburi', 'Chon Buri', 'Phetchaburi', 'Nonthaburi' and 'Mae Hong Son' fleet names. Their deliveries to the airline took place during 2005 and the later one in 2008. All of the six aircraft had a seating configuration for eight first class, 60 business class and 199 economy class passengers (a total of 267 passengers).

With the deliveries of the A340-500/600s, none of the 16 Boeing 747-4D7s of Thai Airways were retired. The airline continued operating them while it had only its two ageing Boeing 747-3D7s (HS-TGD and HS-TGE) withdrawn from service in 2007. The airline operated the A340-642s on the routes which the Boeing 747-4D7s were flying.

Retirement

Thai Airways, which had been operating two-engine Boeing 777-200/300 wide-body airliners since 1996, found that the 777 lacked the necessary range for some ultra-long-haul flights compared to the A340. But, as Boeing developed the Extended Range (ER) variants of these aircraft, Thai Airways chose the new ER variants as replacements for its A340 fleet.

The A340-541s were all retired by 2012. A few days after their retirement, each aircraft was flown to Don Mueang International Airport, Bangkok, and placed into storage. Initially put up for sale by the airline in 2010, the aircraft were later handled by an aviation consulting company.

Although the A340-541s were retired after just five to seven years of service, three had reached their deadline for D Checks. Among the four aircraft, one was procured by the Royal Thai Air Force in 2016. It was assigned the registration 'HS-TYV' and serial number 60204, and was used for government flights.

The six Airbus A340-642s remained in service for three years longer than the A340-541s and were retired by 2015. Their routes were taken over by Boeing 777-300ER.

▼ Former A340-642 of Thai Airways (HS-TNF) now as '2-STNF' in possession of Hua An Aviation Parts at Taiyuan Wusu International airport, China Chen Taoran

A new life?

The six A340-642s retired from service were stored at U-Tapao/Rayong-Pattaya International Airport. All were put up for sale and Hua An Aviation Parts Co. Ltd from Taiyuan, China, procured four of them – along with two A340-541s – for a total of $9.6m USD in September 2022. The remaining two A340-642s, 'HS-TNC' and 'HS-TND', were not sold and were instead selected for scrapping. Their useful parts, including the Trent 556-61 turbofan engines and auxiliary power units (APUs), were removed and apparently sold to Mahan Air in Iran. After the parts were stripped, the fuselage of 'HS-TND' ended up at a café near Rayong, while the other aircraft was scrapped at U-Tapao Airport. The engines and other parts were reportedly shipped to Iran in April 2024.

The four A340-642s sold to Hua An Aviation Parts Co. Ltd, were flown to Taiyuan Wusu International Airport over the course of a year. They were assigned the temporary registration codes '2-STNA', '2-SNTB', '2-STNE', and '2-STNF', with flights taking place on December 22, 2023, April 3, 2024, June 28, 2024, and October 15, 2024, respectively. One A340-541, 'HS-TLD', received the registration code '2-STLD' and was flown to Taiyuan on December 27, 2024, a second 541, 2-STLB (HS-TLB) was flown to China on February 13. Upon arrival in China, each aircraft was moved to the company's aircraft hangar for a D-check or overhaul.

Given that the parts from the two retired A340-642s 'HS-TNC' and 'HS-TND' reached Iran, many within Thai Airways believe that Mahan Air might become the future operator of the five A340s acquired by Hua An Aviation Parts Co. Despite their poor fuel economy and unpopularity in the market for long-haul wide-body passenger aircraft, the A340-642s are the most favoured variant at Mahan Air, Iran's largest airline. This preference is due to the aircraft's relatively lower maintenance costs in Iran, higher maximum takeoff weight (MTOW), and, most importantly, its Rolls-Royce Trent 556 turbofan engines, which have parts that are more readily available in the market compared to the CFM56 turbofan engines used in the A340-200/300 series. AN

▲ **Operated by Thai Airways between July 26, 2005, and March 28, 2015, 'HS-TNB' is one of the four A340-642s sold to Hua An Aviation Parts Co. Ltd, in 2023** Aero Icarus

▼ **A Boeing 777-3ALER of Thai Airways departing Paris, Charles De Gaulle in 2023** Babak Taghvaee

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Flying a Red Flag

Aviation News sat down with Flt Lt **Liam Matthews** of No6 Squadron to tell us what it's like to fly the Typhoon in a Red Flag exercise

CONRAD
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▲ **Mattews prepares to put on his helmet while on the flight line at Nellis AFB**
AS1 Leah Jones/UK Crown Copyright

◣ **RAF Typhoons prepare to take off for the first mission of Red Flag 25-1 with the Las Vegas Strip as a backdrop**
AS1 TOMAS BARNARD/UK Crown Copyright

▲ RAF 6 Squadron ground and aircrew with their Typhoons at Nellis Air Force Base during Red Flag 25-1 AS1 Leah Jones/UK Crown Copyright

RAF Lossiemouth-stationed No 6 Squadron discovered that they were heading to Nellis AFB, Nevada, to participate in Exercise Red Flag 25-1 (RF25) a fair amount of time before, due to the exercise plan for all RAF Typhoon Squadrons being published well in advance. The squadron commenced the work-up cycle and planning for RF25 after returning from a stint at RAF Akrotiri, Cyprus, supporting Operation Shader.

So what is required to prepare aircrew for a Red Flag? Flt Lt Liam Matthews explained: "After returning from Op Shader the work-up required a switch in mindset to high end air-to-air mission sets against a highly competent adversary. To train for this, we first needed to ensure we were familiar with Nellis AFB procedures, how to get in and out of the airfield when you're sharing that operating location with more than 100 other aircraft. Once we were familiar with this, we utilised the simulators to train for missionised defensive counter air (DCA), and offensive counter air (OCA) scenarios."

The aircrew studied the airspace surrounding Nellis AFB and the huge Nevada Test and Training Ranges (NTTR) to become familiar with rules and regulations. With many hours practicing in the simulator in Scotland and plenty of prior studying, the squadron departed RAF Lossiemouth on January 15 with eight Typhoon FGR4s which were a mixture of Tranche 2 and 3 airframes. The RAF jets arrived at Nellis AFB on January 23 and 24 – this was longer than anticipated due to unusually poor weather en route. Stops were taken in Lajes (The Azores), Bermuda and Eglin AFB in Florida.

More than 100 personnel from the squadron attended the exercise, comprising of engineering, mission support and aircrew. Twenty-four airmen were in attendance for the exercise itself with all 6 Squadron pilots and guest pilots from other RAF Typhoon Squadrons.

A major focus of RF25 was interoperability between the US, Australia and UK, as well as integrating fourth- and fifth-generation fighters to work together effectively. Matthews said: "It was a great opportunity for people to conduct Mission Commander (MC) and Team Lead upgrades, especially for the Americans. RAF pilots fulfilled these roles and gained experience in these roles prior to completing upgrades in the future."

This was Flt Lt Matthews' first time taking part in a Red Flag. When asked how it felt to arrive at Nellis and what stood out, he replied: "The sheer scale of the exercise and how many other aircraft are on the flight line once you land and taxi. I haven't seen that number of other fighters and bombers all in one place anywhere else in my career. There is also the pedigree of RF – it's the first exercise people ask you about, whether you have ever taken part in one, what was it like, etc. So there is increased excitement to take part in a Red Flag at Nellis.

"Once we arrived at Nellis, the aircrew had numerous briefings to attend alongside our American F-15, F-16, F-35, B-1, B-52 and Australian E/A-18G and F-35 colleagues. Once these had been completed, we needed to conduct a familiarisation sortie for as many of our pilots who had not previously flown at a Red Flag. This was a simple sortie to allow us to see the departure and recovery procedures specific to Nellis and to get in and out of the training airspace. Being able to do this without the added pressure of having to fly a mission or there being 100 other jets getting airborne was worthwhile. During this time, the engineering team was doing any work required on the jets to get them ready for the first mission."

Red Flags are known for their multinational participation, working together with various other units operating a variety of air platforms. Matthews explained how the participants bond from the start: "You're very quickly integrating and working together during mission planning. Everyone is working from the same location, so you start to build up multinational relationships as the weeks progress."

Matthews said the Typhoon was used as an air-to-air fighter primarily in an escort or DCA role during RF25: "We need to work closely with the USAF and RAAF fifth-gen aircraft to maximise the effectiveness of everyone. The Typhoon has the unique ability to operate higher than a lot of other fighters, due to our power and delta wing, which adds an extra element to how we can fit into a package of aircraft. Working together with Growlers, USAF, USMC and RAAF F-35s was a great experience."

Matthews also explained that various air-to-air loadouts were able to be simulated depending on what was required of 6 Squadron during the mission.

Into the fight

Once all preparation and familiarisation is complete, it's time for the game to begin. Matthews explained: "Day 1 started with transport onto base, ensuring that all your mission products are complete and everything is good to go. You then proceed to a main briefing room, where the MC, who started planning a day prior, will brief everyone flying in that mission. All things are covered in this, including real world safety factors, weather, rules, etc. At this point you're generally trying to absorb a lot of information and note down anything that is specific to your formation to enable you to then go and execute correctly and safely. On this Red Flag none of the 6 Squadron members were overall MC, but some had other positions within the planning cycle such as Deputy MC and Team Leads. Once the briefing is complete, formations go back to their individual planning rooms to conduct a final formation brief. After this, the pilots will walk over to the flightline to sign for their aircraft, get kitted up and then walk out to the jets.

"The increased activity and noise can complicate things such as communicating with the engineers and line teams, but it also sets the scene and reminds you that you're a part of a large force of different aircraft and that you need to ensure that you get started up, taxi and get airborne as planned at the correct time in order to make the whole thing work."

Matthews explained the process of releasing the parking brakes and heading out to the active runway: "Our callsign for the exercise was 'CHEVY'. The start-up and radio comms procedures were different from normal ops at Lossiemouth, but we'd practiced these in the sim at home, so it all went smoothly. Taxiing was also different due to the number of aircraft and limited space near the holding points. This all comes down to ensuring that you are on time and taxi at your assigned time to meet your take-off slot. This normally worked well, but sometimes

▲ **Matthews walking to his assigned jet for a Red Flag mission** AS1 Leah Jones/UK Crown Copyright

▼ **A 6 Squadron Typhoon takes off from Nellis Air Force Base** AS1 Leah Jones/UK Crown Copyright

▲ **Royal Air Force 6 Squadron Typhoon being refuelled by a Voyager aircraft** AS1 Leah Jones/UK Crown Copyright

▼ **An RAF 10/101 Squadron Voyager takes off on a refuelling mission** AS1 Tomas Barnard/UK Crown Copyright

you'd find yourself waiting for other formations to get airborne before you. At this point it wasn't uncommon to be sat next to a four-ship of F-16s, F-35s, F-18s and F-15s! It's busy! Trying to launch and recover that many aircraft during a short period of time means there is lots of radio chatter.

"Due to the proximity of Las Vegas International Airport and their airspace, the departure is very procedural, flying to certain visual points at specific altitudes before then climbing to get above the high terrain that surrounds the Las Vegas area. Once we were heading out to the range, we would switch to Nellis Control, who would give us access to the range itself. Once safely established in the range and on the correct routing, we'd contact command and control (C2), provided by either airborne C2 or 19 Squadron at the CRC at Nellis. They would then control formations to either get to the tanker or straight into the fight.

"Once the fight starts, trying to build situational awareness is key as often we are joining 'mid vul', which means you need to quickly build the correct mental picture of what is going on in front of you. We go to the tanker once per sortie, which is all worked out in pre mission planning. Sometimes we wouldn't get fuel based on other considerations. The only probe and drogue tanker in the exercise was an RAF Voyager, so we shared that with the USMC F-35Bs, USN Growlers and RAAF F-18s/Growlers." Throughout the exercise, an RAF Voyager provided air-to-air refuelling for more than 140 aircraft, delivering over 320 tonnes of fuel.

One of the advantages of attending a Red Flag, is that pilots can use the NTTR, especially for foreign participants who don't have access to training areas like it back home. This less restricted and larger airspace allows the pilots to push the aircraft's performance to the max, and unlike in the UK, the Typhoons can go supersonic over land.

Return to base

Mentally drained from the focus required and the Gs pulled, the pilots return to base at Nellis. "The transit is roughly 20-30 mins depending on how you fit into the train of aircraft," Matthews said. "You're primarily focused on deconfliction from other formations, ensuring your formation has no issues and has enough fuel to recover safely. Again, it's fairly prescriptive, with points to fly and heights to be maintained, making sure that you're in the right place and the correct distance from the formation in front of you. Then you're into either a visual recovery by day if the weather allows or an ILS at night."

When asked what it was like to recover with so many other aircraft, Mattews said: "The circuit will be busy. We have to ensure a 10nm separation from the formation in front, to allow time for them to break into the circuit before we arrive in the overhead. That means that when you're leading your fourship through initial, you can see a train of four F/A-18s turning final in front and slightly below you. At the same time, you may have a formation recovering to a parallel runway, so you really need to keep your eyes open. Once you land and taxi off the runway, you can look back and see the next formation breaking into the circuit on short finals.

"The first time you can really relax is when you're turning off the end of the runway and look back at the stream of lights on approach behind you or the jets in front of you taxiing back to the parking areas."

Once the G suit and other flight gear is taken off, its time for a detailed debrief, which is where the learning is done during a RF. Matthews described the debriefs: "They can be long. Once everyone lands and reviews their own individual and formations tapes, they feed that data into white force. Then everyone goes to the room where the mission is played back on a big screen in real-time. This is where you validate any shots you have taken and whether or not your kills have been recorded. At the end of this process, you have a pretty good idea of how the mission has gone. The MC and their team will then pull out the main learning points from the mission and detail how and where we could have done better or done something different."

The final numbers of RF25 was around 110 hours of flying over 81 sorties, including familiarisation flights for 6 Squadron. Broken down into individual aircrew, Matthews said: "Generally, we fly four missions each, with a full day of planning for each mission. Most people will do a week on days and a week on nights, so my missions were split 50/50 day and night."

When asked what he took away from his RF25 as a Typhoon pilot, Matthews said: "A lot of lessons learned from the mission planning process and the experience of flying alongside so many other aircraft in complex missions has been very beneficial for the whole squadron."

RF25 also marked his final exercise as a 6 Squadron pilot. Once back in the UK, Matthews is due to move to II(AC) Squadron at RAF Lossiemouth, flying the Typhoon FGR4 for another few years. He commented: "Being on 6 Squadron has been exceptional and being able to deploy to Red Flag at the end of my first frontline tour has been a great way to finish. It's one of those exercises that you have heard about before you join the RAF and is one you want to tick off during your career." AN

▲ **As well as day missions, the Typhoons also flew large scale missions at night over the Nevada ranges** AS1 Leah Jones/UK Crown Copyright

▼ **Two RAF No 6 Squadron Typhoons head out to the active runway** AS1 Leah Jones/UK Crown Copyright

PREPAR

a legend fo

Philippine Mars powering up to depart Canada for the last time All images Aaron Burton

Spotlight

Only seven unique Martin Mars airframes were built for the US Navy during World War Two, to provide airlifts between Hawaii and the Pacific islands. After serving their country, four of the aircraft were purchased by Forest Industries Flying Tankers and converted into firefighting water-bombers. Decades later two of them – Hawaii Mars II (JRM-1 BuNo 76823) and Philippine Mars (Bu. No. 76820) – were bought by Coulson Aviation and served from Vancouver Island in British Columbia. The Philippine Mars had not flown since 2007, until preparations began for its final journey to Pima Air and Space Museum (PASM) in Arizona.

Preparation

The fate of Philippine Mars was announced by PASM in April 2024. Work to prepare Philippine Mars for its final flight to Tucson, Arizona, ramped up in September 2024, following the final flight of her sister, the Hawaii Mars in August to the British Columbia Aviation Museum at Victoria

ING

r rest

The latter end of 2024 and early 2025 saw two iconic Martin Mars waterbombers aircraft, the Hawaii Mars and Philippine Mars re-located to their eternal places of rest. Aaron Burton followed the preparation of Philippine Mars in Sproat Lake and captured some moments of history.

NAVAL AIR TRANSPORT SERVICE

International Airport, near Sidney, Canada.

By October 2024, all four of Philippine's engines were running and the aircraft was launched back into Sproat Lake, located near Port Alberni. The first half of November 2024 was spent performing taxi trials, until issues with the Number Two engine led to it being swapped out with the powerplant from Hawaii Mars.

By November 30, Philippine was back in the water and had performed a high-speed step taxi down Sproat Lake. On December 3, she flew for the first time, followed by further step taxi trials and test flights. On December 11, she lifted off for her first attempt to reach Arizona, but only got as far as Nanaimo, Canada, before the crew turned back with engine trouble. Four days later, after a short delay waiting for fog to clear, she flew down the east side of Vancouver Island to Victoria International Airport, where she made a farewell flypast over Hawaii Mars at the BC Aviation Museum. She then proceeded towards Port Townsend in Washington state, before trouble with the Number Four engine forced her back north.

Snapshot

▲ Philippine Mars powering down Sproat Lake on one of its taxi tests

◥ One of the last ever pictures of this unique aircraft in flight

▼ Coulson Aviation had to swap out the Number Two engine from the Hawaii Mars

Philippine landed in Pat Bay, near the Victoria International Airport – the same place Hawaii Mars had landed on its final flight months earlier. The aircraft was assisted to a Navy buoy by members of the Canadian Coast Guard. Crews worked on the damaged engine in the week running up to Christmas and, on December 20, a taxi test was attempted. Number Four engine subsequently caught fire and poured out smoke, but was shut down before serious damage occurred. In early January, she was towed about 15km to Cowichan Bay for further repairs.

The maintenance crew from Coulson Aviation replaced Number Four engine on Philippine Mars with the corresponding engine from Hawaii, after which Philippine flew back to Sproat Lake to be thoroughly checked over and repaired. In the first week of February, the Coulson Aviation team

PHILIPPINE MARS

PHILIPPINE MARS

PHILIPPINE MARS

Maintenance crew work on one of Philippine's engines

performed more taxi and flight tests. Satisfied with the aircraft, Philippine was scheduled to leave Sproat Lake on February 9.

On that morning, Philippine made a low pass over Coulson Tanker base, before flying down the Alberni Inlet towards the US. On the flight south, she was joined by numerous aircraft at various points along the West Coast, including another World War Two-era flying boat, a PBY Catalina. She made a pass over the Golden Gate Bridge before touching down in San Francisco Bay and tying up next to the Alameda seaplane base and USS Hornet Museum.

After overnighting in San Francisco, Philippine lifted off for the very last time, headed for Lake Pleasant near Phoenix, Arizona. Along the way she was joined by a P-51D Mustang, T-6 Texan and the only airworthy PB4Y Privateer, also a former aerial firefighting aircraft. She arrived at Pleasant Lake on the evening of February 10, and will be pulled from the water, dismantled and trucked to PASM to be put on display.

Sister ship Hawaii Mars undergoing an engine removal

Up close on the water with the Philippine Mars

A DECADE

Low-cost airline giant Ryanair is on a journey to upgrade its fleet to carry 300 million passengers a year by 2034. **Thomas Haynes** examines recent events at the carrier and reports on its plan to achieve this ambitious aim

▲ Ryanair has an ambitious plan to continue growing as Europe's number one airline and growing its yearly passenger numbers to 300 million by the year 2034 All images Lee Spencer unless stated

▶ EI-HEN (c/n 62301) was delivered on June 16, 2021, as Ryanair's first 737 MAX 'Game Changer' seen departing Manchester Airport late in the afternoon

Like all airlines, Ryanair was not immune to the effects of the COVID-19 pandemic. In the years prior, it had tracked an impressive trajectory towards its long-time goal of carrying 200 million passengers in a single year. The travel restrictions of 2020/2021 dealt a significant blow, but it wasn't long before traffic figures returned and exceeded pre-pandemic numbers. In 2019, it carried 142 million people while at the height of the crisis during 2020, just 27.5 million flew with the airline. However, it would take only three years for it to reach close to 200 million, making Ryanair, Europe's number one airline customer in terms of traffic.

Base boost

Emerging from the pandemic in 2021, the low-cost carrier went on a base launching spree in a bid to cement its position as the leading airline in select markets. New locations included Agadir, Billund, Stockholm/Arlanda, Riga, Turin, Venice/Marco Polo and Venice/Treviso. It also reopened its Cork base.

The following year, it relaunched its hubs in Girona and the Canary Islands at both Tenerife/South and Lanzarote, while also opening new bases in Madeira and Newcastle.

Speaking at the time of the latter's launch, Ryanair's director of marketing, Dara Brady, said: "The opening of this base and introduction of these new routes from Newcastle reinforces our commitment to increasing connectivity, travel options and inbound tourism to the area as Ryanair will now offer 40% more capacity than it did pre-pandemic."

In 2023, another handful of bases were launched including Copenhagen, Dubrovnik, Reggio, Tangier and Trieste. According to the latest quarterly report in January 2025, the company reported it currently has 94 bases, operates from 237 airports

OF GROWTH

RYANAIR
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within 37 countries, offering a total of 2,600 routes, 64 of them being new in the upcoming summer. On January 31, Ryanair announced it will close its base in Billund, Denmark and cut routes to and from Aalborg from the end of March. This is due to the country introducing an aviation tax to passengers. During the FY25 Q3 results, Michael O'Leary, Ryanair Group CEO, said: "Over the coming year, we'll reallocate this scarce capacity growth to those regions and airports in Poland, Sweden and Italy, who are investing in growth by cutting/abolishing aviation taxes, and incentivising traffic growth."

Fleet focus

As has long been the case, Ryanair is a single-fleet all-Boeing airline – with the small exception of its Austrian subsidiary Lauda, which flies a roster of 27 Airbus A320-200s.

RYANAIR
RYANAIR
EI-HEN

▶ Ryanair's 9H-VVE 737 Max 8-200 'Game Changer' taxiing at Manchester Airport. Ryanair is expected to receive nine more of the type before summer 2025

▼ The 737-800 remains the backbone of Ryanair's fleet

The 737-800 – the most popular variant of the American-built narrowbody – has become the cornerstone of Ryanair's line-up. Since taking delivery of its first example in March 1999, the carrier has operated more than 500 examples. Some of its older airframes have been retired subsequently, with its maiden five examples – EI-CSA through EI-CSE – exiting at the end of 2007. Its current fleet of -800s stands at 411 examples, which range from 20 years old, to the youngest few being a hair under six years old. All are configured to seat 189 passengers in a single-class layout.

With this huge contingent, Ryanair will be operating the variant for many years to come. In a sign of its commitment to the type, the low-cost carrier signed a $175m agreement with Aviation Partners Boeing (APB) in January 2023, which will see new split scimitar winglets being retrofitted across the entire fleet. The upgrade will improve aircraft fuel efficiency by 1.5%,

▶ A Ryanair 737-800, EI-DCK takes off into the night

which while not sounding like much on its own, when spread across the 400-strong fleet will reduce the airline's annual fuel consumption by 65m litres.

In its 2024 financial results, the carrier recorded a €5.1bn annual spend on fuel. Assuming static oil price and currencies, the quoted 1.5% fuel efficiency would equate to a yearly €76.5m saving, so its winglet programme would be cost-neutral after around two-and-a-half years operating a fully retrofitted fleet by 2026.

Not only does the programme have financial benefits, it also helps with the airline's sustainability targets. Thomas Fowler, Ryanair's director of sustainability, said: "This winglet technology will help us reach our ambitious environmental targets on our pathway to net-zero emissions by 2050.

"We are impressed with APB's innovative winglet designs and look forward to having them installed on not just this first aircraft but on over 400 of our aircraft to further reduce our emissions."

After taking delivery of its final -800 in December 2018, Ryanair's focus then turned to its next inductee; the Boeing 737 MAX. Following its 2014 order for 100 MAX 200s options, deliveries were due to start in 2019. However, the global grounding of the type led to significant delays in recertification and handovers. Since then, the company has grown its order to a total of 210 'Gamechangers' with the latest order being in late 2020.

Its first example, EI-HEN (c/n 62301), was delivered on June 16, 2021. Dubbed the 'Gamechanger' by the airline, the next generation jet carries 4% more passengers (197 in total) but burns 16% less fuel per seat when compared with the -800.

Speaking at the time, Ryanair's CEO Michael O'Leary said: "We are delighted to take delivery of

▲ The low-cost carrier accepted its 450th 737-800 in March 2017, taking an average of 25 per year since 1999

▼ As of February 2025, the Ryanair fleet of 737 MAXs stands at 173

RYANAIR
EI-HGR

▲ Ryanair's total order commitment for 737 MAX 200s stretches to 210 airframes. This example is pictured landing at Edinburgh airport

our first new technology Gamechanger aircraft. These new Boeing 737s will help Ryanair lower costs, cut fuel consumption and lower noise and CO2 emissions as we invest heavily in new technology to deepen our environmental commitment as Europe's greenest, cleanest major airline."

Delivery delays

Since 2021, the firm has taken 173 MAXs 'Gamechangers' spread across its subsidiaries. Its Polish outfit Buzz has 14, while Malta Air currently flies 43, leaving the remaining 116 with Ryanair.

While 173 is a significant intake, it is not nearly as many as the company would have liked or had planned for and 38 are still due to be delivered. Ryanair is continuing to deal with delivery delays caused by Boeing and its various issues, which have halted handovers at points, and significantly reduced its volumes at others.

The company expects to receive nine 'Gamechangers' before the summer 2025. In January, O'Leary said: "We are confident that we will get all of those, they are either in production in Seattle or the hulls have been or are being shipped by rail from Wichita to Seattle."

He added: "We continue to work with Boeing to accelerate aircraft deliveries and visited Seattle earlier this month [January]. While 737 production is recovering from Boeing's strike in late 2024, we no longer expect Boeing to deliver sufficient aircraft ahead of summer 2025 to facilitate FY26 traffic growth to 210 million passengers. Boeing delays have forced us to revise our FY26 traffic target to 206 million (just 3% growth). We're hopeful that the remaining 29 Gamechangers in our 210 orderbook will deliver before March 2026, enabling us to recover this delayed traffic growth in summer 2026 instead of summer 2025."

Bagging more Boeings

As well as its 'Gamechangers', a decision came in May 2023 when it signed a deal for up to 300 737 MAX 10s, valued at more than $40bn based on list prices. Comprising a firm commitment for 150 examples and options for a further 150. The company is expecting 15 deliveries in the spring of 2027 through until 2033.

With capacity for 228 seats, the yet-to-be-certified MAX 10 is the largest variant of the 737 MAX family and is due to be certified after the Max 7. Ryanair sees the type as being the key enabler for it to grow its annual traffic to a lofty 300 million by March 2034. The company expects

BUZZ
RYANAIR
EI-HGH
MALTA AIR
9H-VUA
VUA
MALTA AIR

▼ Boeing 737 MAX 200s bound for Malta Air, Buzz and Ryanair are seen here at Renton, near Seattle Ryanair

RYANAIR
RYANAIR
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Ryanair signed a $175m agreement with Aviation Partners Boeing (APB) in January 2023, which will see new split scimitar winglets being retrofitted across the entire fleet

RYANAIR
BOEING

▲ In May 23, the low-cost carrier signed a deal for up to 300 737 MAX 10s, valued at more than $40bn based on list prices Boeing

half of these airframes to serve as replacements for older 737-800s, suggesting that type could at least still have a place in Ryanair's operation in a decade's time.

O'Leary said: "We expect the MAX [10] certification to take place towards the end of 2025, subject to Boeing successfully certifying the MAX 7 in the first half of the year."

Cash is king

Ryanair maintains what is called a "fortress balance sheet", which enables it to withstand financial shocks that would knock some airlines off course. The key to this is its cash position, which is strong as it ended the financial year in 2024 with net cash of €1.37bn, up from just over €500m the previous year.

Neil Sorahan, Group chief financial officer, said at the January conference: "We are unique in the industry in that we own our own Boeing 737s, 582 of these aircraft are unencumbered on our balance sheet."

Capacity constraints

Ryanair is an opportunistic airline – whether that is leveraging an industry downturn to secure aircraft at rock bottom prices, as it did in 2001 with its huge order for 737-800s, or snapping up low-cost rival Buzz from KLM due to what O'Leary described as "opportunistic" timing.

The big opportunities of the next couple of years come in several forms, but key among them is the Pratt & Whitney GTF engine. The serviceability problems relating to the powerplant, which powers a large chunk of the global Airbus A320neo and A220 fleets, has worsened a capacity crunch in Europe that Ryanair is positioning itself to exploit. One of the airline's biggest rivals, Wizz Air – which operates an all-Airbus roster – is heavily impacted by the GTF problems and has had to reduce capacity in its operation as a result.

When asked about his view on European capacity constraints in January, Soharan replied: "I think it's going to remain constrained, it is very clear that the A320 operators are going to continue to be impacted by the Pratt & Whitney engine issues for at least another couple of years."

He continued: "Boeing and Airbus are way behind on deliveries with no sign of catching up in the short- to medium-term. At the same time consolidation is happening across Europe which will take more capacity out.

Concluding, Soharan said: "And we at the same time will be growing by another 340 aircraft to 300 million passengers in the capacity-constrained market, so growing profitably over the next decade."

▼ in January 2025, the company reported it currently has 94 bases, operates from 237 airports within 37 countries, offering a total of 2,600 routes. Boeing

AVIATION NEWS

香港貨運航空
HONG KONG 香港
ASIA'S WORLD CITY 亞洲國際都會

Hong Kong Air Cargo flight 396 arrives at Prestwick from Hong Kong via a technical stop in Almaty. The inaugural flight on 11th February marked the first dedicated cargo service between Scotland and the Far East. HKC will deploy their A330-200 freighters on the route with the business looking to enhance their offering from Asia's booming e-commerce hub to the U.K. market. Stewart Marshall/ Glasgow Prestwick Airport

NEWS

276
270
DANGER
DANGER
Fire Attack
Sydney Helicopters Group

During the deadly Black Summer bushfires of 2019/20, the company flew more than 4,200 flight hours and dropped around 13 million gallons of water

Providing from above

Joe Campion stepped into the operation of Sydney Helicopters, a company that provides essential services in New South Wales, Australia, via a mixed fleet of single and multi-engine rotary-wing platforms

Sydney Helicopters

▲ Mark leads a team of experienced full-time pilots and aircrew. The company contracts additional crew as required for some seasonal work

Fire Attack
412
Sydney Helicopters Group
FIRE
VH-NSC
Fire Attack
Fire Attack

▲ Sydney Helicopter Group operates a mixed fleet of Airbus AS350s and Bell 412s
All images, Joe Campion

▼ The company began operating Bell 412s in 2018 and now has six following final delivery of VH-82E in January this year

Sydney Helicopters is a critical asset for the people and public agencies in New South Wales (NSW) in a range of scenarios. The company's fleet of Bell 412s and Airbus Helicopters AS350 Squirrels delivers vital services, from flood and emergency relief to aerial firefighting. Further services include aerial crane/lifting, power line inspection and stringing, land management operations, aerial observation and surveying.

The company is also involved in filming work for large public events – such as the international broadcast of the Sydney New Year's Eve fireworks display, the coverage of the Sydney to Hobart blue water open ocean yacht race and the Sydney Marathon, a very complex operation when it comes to configuring multiple helicopters with camera and link equipment and operating in Sydney's controlled airspace.

Founded in 1985, originally for charter and tourism, the company has developed into a diverse service provider. Current owner and chief pilot Mark Harrold took over the business in 2006 and it has since evolved into a utility-based operation focusing on providing emergency and essential services to both the government and the private sector.

Located just under an hour's drive from Sydney's city centre, Sydney Helicopters operates from Nepean Aerospace Park (airport code YNEP) in Castlereagh, at the foothills of the Blue Mountains, an area under close eye when it comes to wildfires. The facility is set on an 11-hectare site and boasts a large, modern hangar, an in-house engineering facility, training and conference rooms and a VIP lounge for charter clients.

The aerospace park was officially opened on November 23, 2024, by New South Wales Premier Chris Minns in recognition of the facility's importance to the provision of emergency services to Sydney and nearby regions. The opening ceremony was attended by a range of state and federal emergency service representatives, including Rural Fire Service Commissioner Rob Rogers. Owner Mark Harrold said: "It was an opportunity to demonstrate and be recognised

by the highest level of government, the strategic location of our facility and the services that we provide the community. [YNEP] is a game changer, providing quicker response and more efficient deployment of aircraft to communities in need."

During the event, Chris Minns highlighted the company's work, and the location of the new facility in New South Wales (NSW). Online, he said: "I helped open the brand new Nepean Aerospace Park, Sydney's only standalone helicopter facility owned by Sydney Helicopters. These guys provide an invaluable service to our state; we'll always back small and medium businesses in NSW, and it's incredible to see this new facility take flight."

A change of location

Sydney Helicopters moved to its current facility in 2021 from its previous home of 25 years, Rosehill Airport, 11 miles from Kingsford Smith International Airport, Sydney. This was due to the compulsory acquisition of the Rosehill Heliport by the NSW government for development of a railway service.

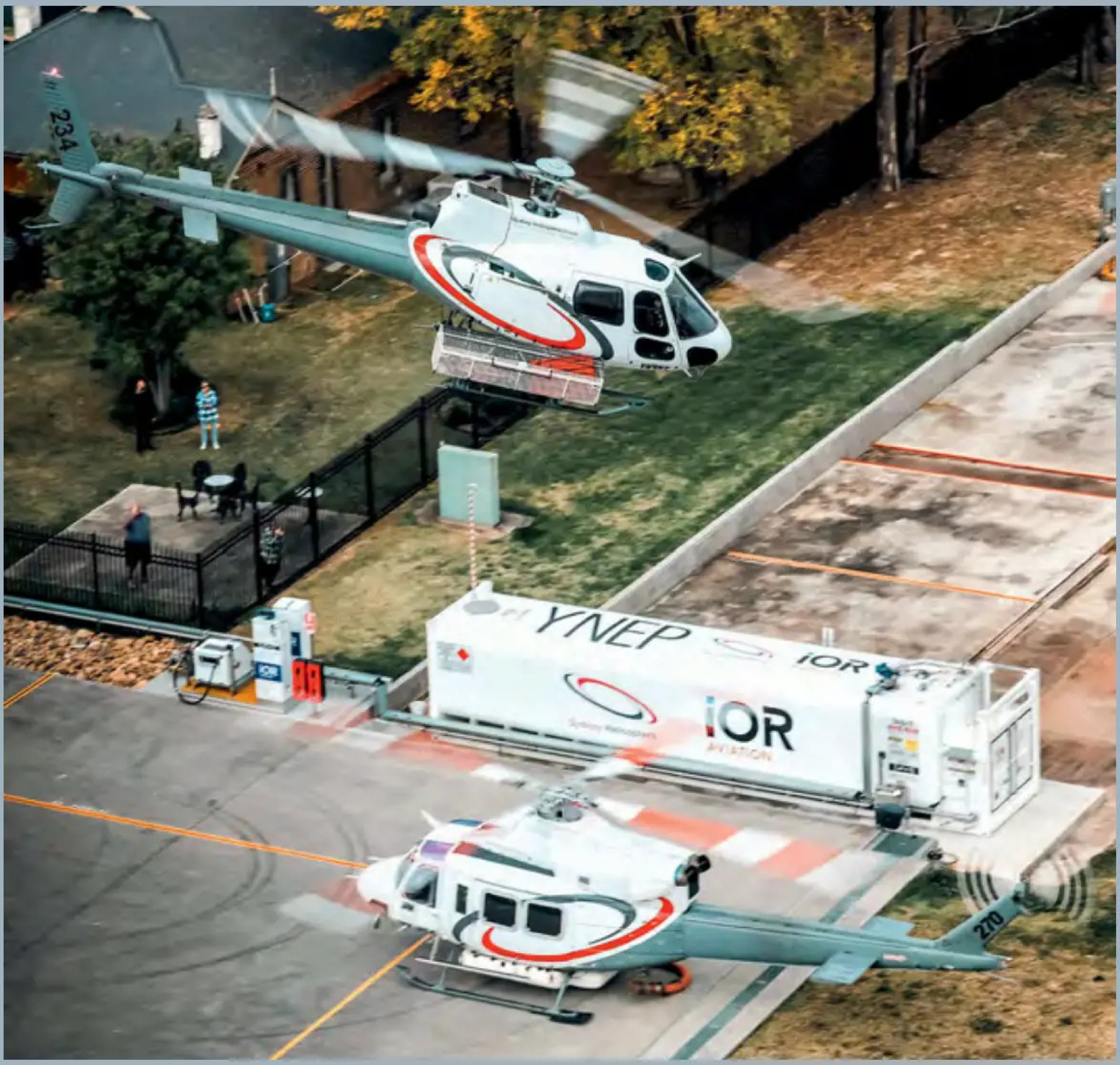
Mark said: "We had to identify a suitable location to which to relocate the business and seamlessly maintain our services. This proved exceptionally difficult and add into the equation the onset of the COVID pandemic, the job of getting relocated seemed almost insurmountable. We ended up turning our attention to a site that I had identified back in early 2019 for a satellite heliport.

"Following a rigorous and sometimes frustrating development approval process, we gained approval for Nepean Aerospace Park, which is perfectly located for the future of rotary and vertical take-off aircraft."

Augmenting the facility's prime positioning even further, the Western Sydney International Airport – a second international airport for Sydney – is scheduled to open in 2026 and will change the configuration of airspace in and around the Sydney basin. Sydney Helicopters is ten nautical miles from the new airport. Mark added: "Our

◀ Mark Harrold in the cockpit of one of the company's AS350 Squirrel helicopters. Harrold took over the business in 2006 and it has evolved into a utility-based operation focusing on providing emergency and essential services

▼ Located just under an hour's drive from Sydney city centre, Sydney Helicopters operates from Nepean Aerospace Park, Castlereagh, and was opened officially in late 2024



▲ One of the company's Bell 412s, training for firefighting ops, flying low through the Blue Mountains, an area often prone to bushfires

base at YNEP sits beneath the control step, which will afford us a rapid response to the ever-present threat of bushfire in the Blue Mountains National Park and the communities that border it."

The team

Mark leads a team of experienced full-time pilots and aircrew and additional crews are contracted as required for some seasonal work and humanitarian efforts. At the time of writing, the team had flown more than 300 hours in about a month to bushfires in and around the Greater Sydney area, conducting aerial waterbombing, air attack supervision and remote area firefighting, including the hoist insertion of aerial firefighters to combat lightning strikes in the surrounding national parks.

Training is an important element of the business. The company has its own part 141 training entity, offering advanced pilot training for Bell 412 type ratings as well as single engine helicopter endorsements. Training for Night Visual Flight Rules, aerial application firefighting, rescue hoist operations and low-level ratings are also undertaken.

YNEP has large training rooms that can host up to 40 people and both practical and theory elements of courses can be completed at the facility – which is a true positive when teaching: students can learn the methodology/discipline in the classroom then head straight out to the aircraft to execute the practical side in real life!

Aircraft

Operating a variety of types throughout its history, Sydney Helicopters has provided services via Bell 206 Jet Rangers, Robinson R44s, EC120s, BK117s and EC-145 helicopters. It now relies on Bell 412 helicopters and AS350 Squirrels/A-Stars and two Bell 206s.

The company began using the Bell 412 in 2018 and now has six in its arsenal after final delivery of VH-82E in January 2025. The 412s are equipped with Simplex 304 belly tanks capable of carrying up to 375 gallons (1,500 lit) of water to fight fires. The tanks are equipped with Kawak hover refill pumps, allowing the helicopters to refill rapidly at a rate of 400 gallons per minute. The Simplex installation allows for great flexibility as the aircraft can be reconfigured in minutes to undertake long-line water bucket operations without removing the tank.

Mark said: "We find that our aircraft are used in the initial phase of aerial firefighting as a tanking aircraft, especially around the urban interface with bushland and then later in the mop phase as a long-line water bucket aircraft."

He added: "The water bucket configuration allows for specific and very targeted waterbombing of hot spots during the mopping up phase, working very closely with ground crew from the firefighting agencies."

The long-line bucket capability also allows the company's flight crew to access small waterholes in heavily wooded creeks, where it would be impossible to extract water in the tanking configuration. To be able to offer both tanking and long-line water bucket means Sydney Helicopters' aircrew need to be versatile and highly trained. On the same day they could be asked to conduct tanking operations but then must change to the 150ft long-line bucket.

Two of the company's 412s are contracted to the National Council for Fire and Emergency Services

The most recent Squirrel was delivered to the fleet in 2022. Sydney Helicopters uses the type as a utility helicopter due to its adaptability from passenger-carrying to a utility aircraft

The fleet's Bell 412s operate with Simplex 304 belly tanks capable of carrying up to 375 gallons of water to fight fires

until 2026. A number of the 412s are configured with the Goodrich rescue hoists allowing rapid deployment of multiple firefighting personnel to remote areas inaccessible by ground vehicles. A typical crew of aerial firefighters may number up to five, with gear. Their deployment is to suppress a ground fire prior to it becoming larger and therefore removing the threat to nearby communities, a capability impossible without helicopters in such rugged environments as those in the Australian bushland.

With more than 10,000 flight hours, 7,000 of which are on firefighting-related operations, Mark added: "The 412 is a perfect crew transport aircraft; being civilian type certified, we can carry passengers to and from fire grounds and also render assistance during large-scale flood events."

One of the company's full-time pilots, James Williams – who started his career with Sydney Helicopters straight from flight training school 12 years ago – now pilots the 412. He said: "Flying the 412s in firefighting ops for Sydney Helicopters has truly been the highlight in my career as a commercial helicopter pilot.

"The 412 is one of the most versatile platforms on the fire ground, from first on scene initial attack to mop up right through to blacking out the last hotspot. There isn't much we cannot do on the fire ground with our configurations, which consist of a 1,500-lit Simplex belly tank and the ability to still use a 150ft long-line with a 1,300-lit multi-drop Bambi Bucket.

"Add to that remote hook, cargo net, high-density seating for up to ten personnel, Goodrich winch and much more. It's not only a great waterbombing helicopter for initial attack with the belly tank or the

▲ Three of the company's helicopters, transiting to the Blue Mountains from their home base. A second international airport for Sydney is scheduled to open next year and will alter airspace configuration in the region.

multi-drop Bambi Bucket (depending on the terrain and water sources), it's useful for working with crews in the mop up stage conducting spot drops, inserting and extracting by hoist firefighters and medics and other personnel as required, hover entry or remote landings… meaning there's nowhere we cannot get crews.

"In addition, we have capability for conducting FLIR [Forward Looking Infrared] operations and moving supplies and equipment. The ability to not only do these roles, but be able to configure between them within a matter of minutes makes the 412 so versatile."

During the historic 'Black Summer' bushfires that started in June 2019 and concluded in March 2020, 34 people directly lost their lives and another 450 died as a result of smoke inhalation; thousands were forced to evacuate. The company flew more than 4,200 flight hours and dropped more 48 million litres of water, equivalent to 13 million gallons. The fires covered a large mass of land measuring in excess of 243,000 square kilometres (60,000,000 acres), starting in the north of NSW and finishing in the snowy mountains in the south of the state.

When it comes to floods, the company is called on via agencies such as the NSW State Emergency Service and the Rural Fire Service to carry rescue technicians. The 412 shows its worth during floods, its internal cabin able to carry and deliver large quantities of supplies, food and rations to communities that are potentially isolated for many months.

Over the years, the company has operated many Airbus AS350 Squirrels/A-Stars that complement the six Bell 412s; the most recent Squirrel was delivered to the fleet in 2022. Sydney Helicopters uses the adaptable Squirrel for passenger transport, aerial filming, external load, waterbombing with Bambi Bucket (850 lits) attached to 130ft long-line, aerial incendiary, FLIR mapping, reconnaissance, and aerial power line patrol and land management operations, including aerial shooting for feral animal control.

Maintaining the service

Asked about fleet maintenance and support provided by the original manufacturers, Mark responded: "Bell provides good product support through their local representatives here in Australia." Bell recently acquired Eagle Copters in Queensland, so now has a Bell facility in Australia.

Sydney Helicopters has a dedicated maintenance facility via a fully owned subsidiary, Aerotech Sydney, which employs full-time engineering staff available year-round to maintain the company's aircraft fleet.

▼ A number of the company's 412s are configured with the Goodrich hoist, allowing rapid deployment of multiple firefighters to remote areas inaccessible by ground vehicles

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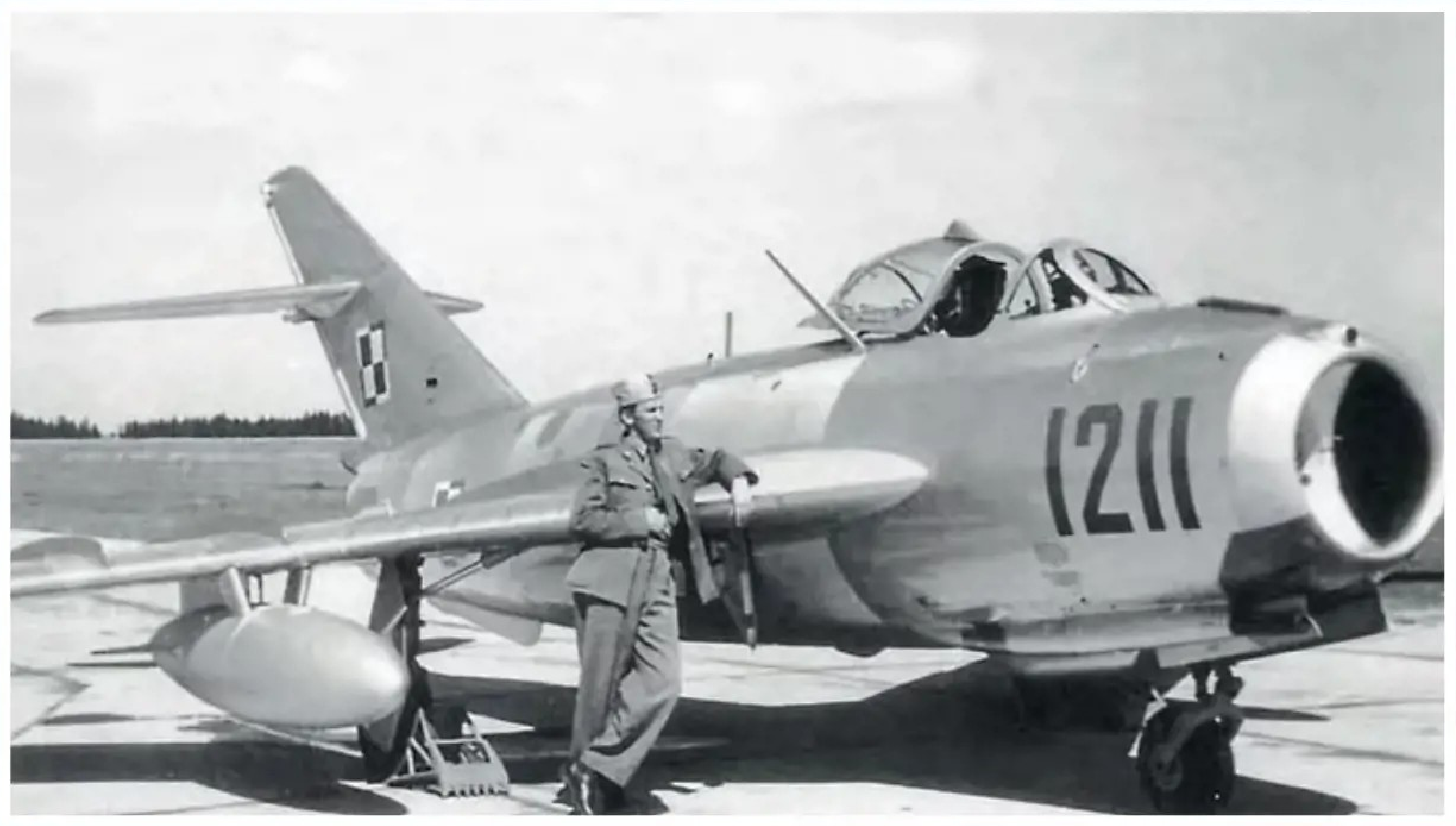
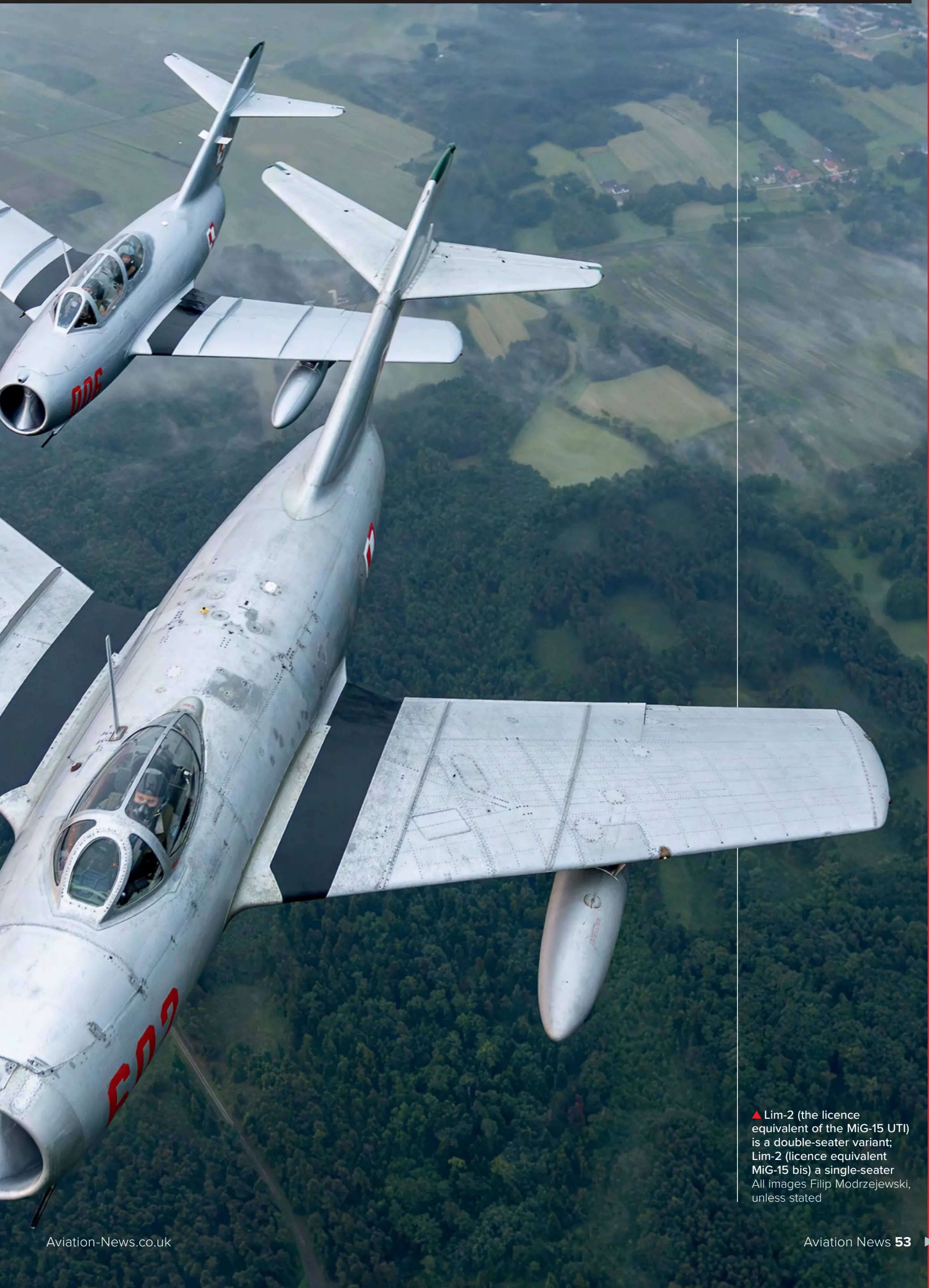


▲ An original picture of Lim-5, designator 1211, during its service in the Polish Air Force in the 1980s. Many pilots who flew this particular aircraft are still close friends of the founders of the Squadron Foundation Squadron Foundation

2 Weren't Enough

Filip Modrzejewski visited the Polish Fundacja Eskadra/Squadron Foundation, which preserves memorable assets of the country's aviation history – specifically, two examples of the Lim-2 (MiG-15), and soon a Lim-5 (MiG-17)



▲ Lim-2 (the licence equivalent of the MiG-15 UTI) is a double-seater variant; Lim-2 (licence equivalent MiG-15 bis) a single-seater
All images Filip Modrzejewski, unless stated

'602' (SP-MIG civil registration) is the only airworthy Lim-2 in the world and the fastest civilian aircraft in Poland

The preservation of Polish aviation history is continuing to be in safe hands. Fundacja Eskadra – the Squadron Foundation – was formed in 2021 by three pilots, Mateusz Strama, Bartosz Maciejczyk and Piotr Kowalski. They had bought an aircraft two years before then later made the rebuilding process more official, forming the foundation.

Mateusz and Piotr were the owners of a Boeing Stearman and Yak-11, among other types. The author was not surprised to hear that Lim-2s flying in Poland were also theirs and from 2022 had been part of the Squadron Foundation. Mateusz, Bartosz and Piotr are very experienced pilots, flying daily as captains on B737 aircraft, with a total of more than 30,000 hours between them.

Introducing the newly formed historical group, Mateusz said at the time: "We have decided to set up the Squadron Foundation, counting on the support of institutions and individuals, whose support would help to reduce the financial burden generated by the two historic jets, and give our flights a bit more audience, while promoting aviation and being able to do more flying.

"We have been present at many airshows in solo displays, and from now on we can fly under the Squadron Foundation banner – this also allows us to be closer to the people and to show these aircraft in an even better way."

The foundation's base is at Warsaw Modlin Airport in Poland, and thanks to the support of the airport's authorities and a great deal of their own work, a hangar for both Lim-2s was built in 2023 and will allow for two more aircraft joining the Squadron Foundation's fleet. It will also enable better restoration facilities for future machines, as so far aircraft have been restored in a rented business jet aviation space – not an ideal set-up for the ground crew volunteers.

The foundation's technical team members are the enablers of all the aviation ventures, which would not be possible without them: mechanics Aleksander Daniluk, Rafał Stolp and Mate Krasztel have been involved with the aircraft from the beginning and it is thanks to their commitment that the machines can fly. They also support pilots during their displays at various places in Poland and Europe.

Lim-2

To avoid any doubt about naming and variants, let's clarify – Lim-2 is a Polish-built MiG-15 (licence version), which was known to be of much better

▲ Bartosz Maciejczyk is also a full-time airline pilot, but his history with MiG-15 jets is longer. He has supported the restoration process of similar aircraft in other countries

quality than Russian or Chinese versions. In fact, people manufacturing these aircraft were proud of their superiority and pilots did notice the difference, which also contributed to the longer lifespan of these aircraft – there are still a few Lim-2s flying throughout the world, but not so many MiG-15s.

The Lim-2/MiG-15 is unique for a few reasons – it's one of the first successful jet fighters to incorporate swept wings, allowing it to achieve high transonic speeds. It was also one of the most produced jet aircraft, with about 13,000 manufactured in the USSR and more than 4,000 built under licence. Thanks to its design it can achieve speeds of Mach 0.9, while having a range of 1,360nm.

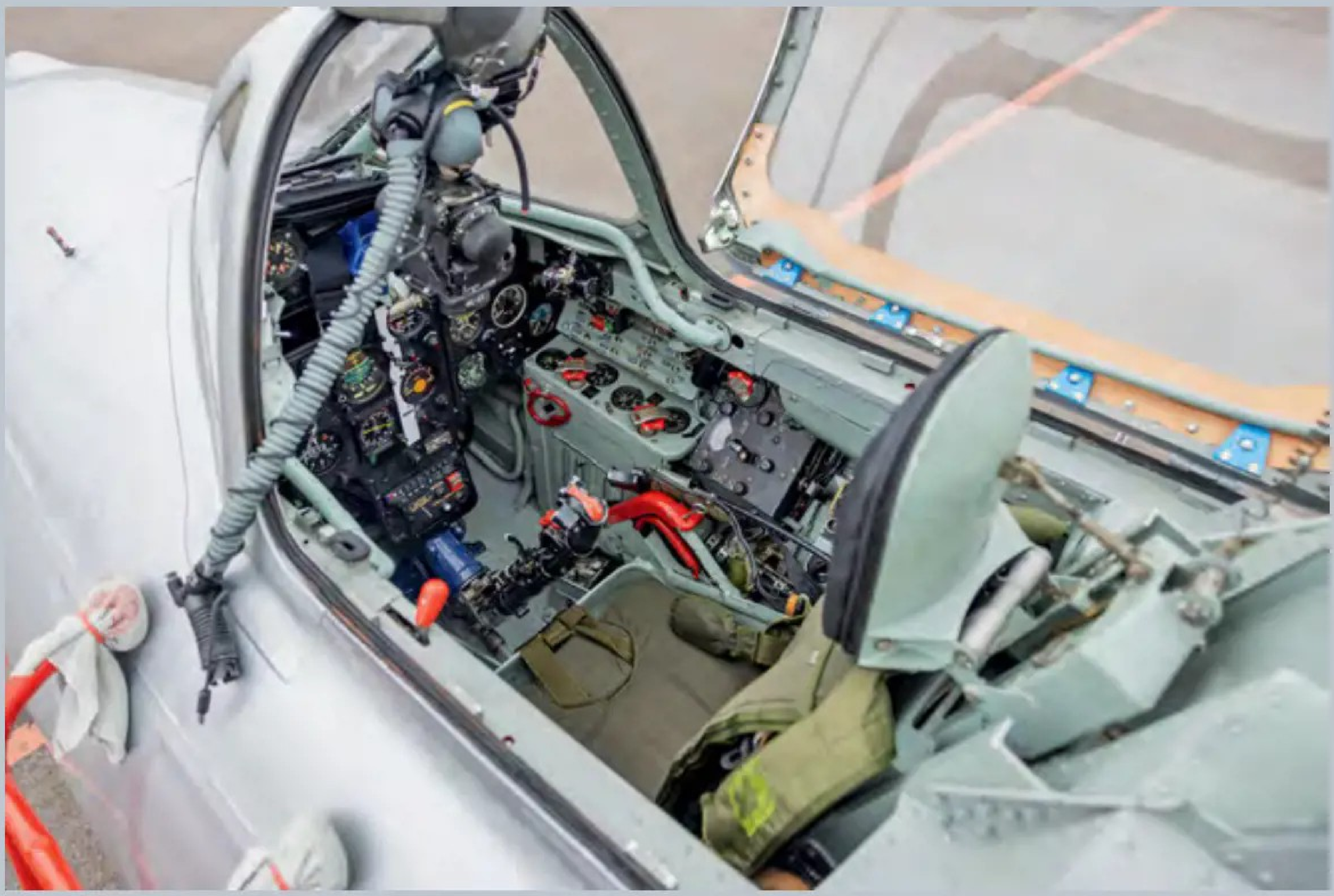
The machines flying with the Squadron Foundation are the two-seater SB Lim-2 (the licence equivalent of the MiG-15 UTI) with designator 006 and registration SP-UTI; and the single-seater Lim-2 (licence equivalent MiG-15 bis) with designator 602 and registration SP-MIG. At the end of September 2023, 006 apparently celebrated 70 years since its first flight; 602 achieved this milestone in January 2025. What is interesting is that 006 was initially built as a single-seat version and was modified to a two-seater in 1974. During their lifespan both machines were serving in multiple units within the Polish Air Force across Pruszcz Gdański, Mirosławiec, Poznań or Warszawa Bemowo air bases. The single-seater version was also used by famous aerobatic team 'Rombik'. To date, it is also the fastest civilian aircraft in Poland and the only flying Lim-2 in the world (MiG-15 bis built entirely in Poland).

The two Lims, despite their similar age, had different reconstruction stories: 006 was purchased in very good condition, only being on the ground for seven years since its last flight. It was practically ready to fly in a few weeks, made possible thanks to the continued efforts of technician Aleksander Daniluk. To ensure the aircraft is safe to fly, the team performed a full maintenance check, including replacement of various components for airworthiness and safe operations. A few months after the first flights, and as the team became increasingly engaged with the aircraft, the avionics were upgraded to modern standards (while still maintaining its look and feel) and the aircraft was resprayed to preserve the original paint scheme.

For the single-seat version, 602, the situation was a little tougher – only the engine had been overhauled, everything else needed work by a team

▲ The aircraft served in multiple Polish Air Force units across various air bases in northern and central Poland

▼ '006' was initially built as a single-seat version and was modified to a two-seater in 1974



▲ The cockpits of each machine were kept as close to the original as possible. However, both airframes were upgraded with Garmin avionics to ensure compliance with IFR requirements

▶ Daily operations of the Lims and their restoration process would not have been possible without the help of expert ground crews and technicians. Here, the pilot is being helped to strap into the cockpit before another display at a Polish airshow

▼ The Squadron Foundation is aiming to show these aircraft at events in Europe and the UK, flying solo and also in formation

of three mechanics, who took 18 months to work on the airframe, landing gear, cabin and other systems. This came as no surprise to anyone – the machine required a full overhaul and verification, including non-destructive testing of the critical power components of the airframe. Despite the heavy workload, it was worth it – in June 2021, the machine took to the skies, returned to its former glory.

As part of the rebuilding process, the pilots wanted each aircraft to retain its original soul and the original cockpit to be left in place, although adapted to modern standards, while having almost the same cabin. Both machines are equipped with a Garmin GTN-650 and AHRS Garmin G-5 and GI-275 – in combination with standard equipment, the machine can perform full IFR flights or instrument approaches.

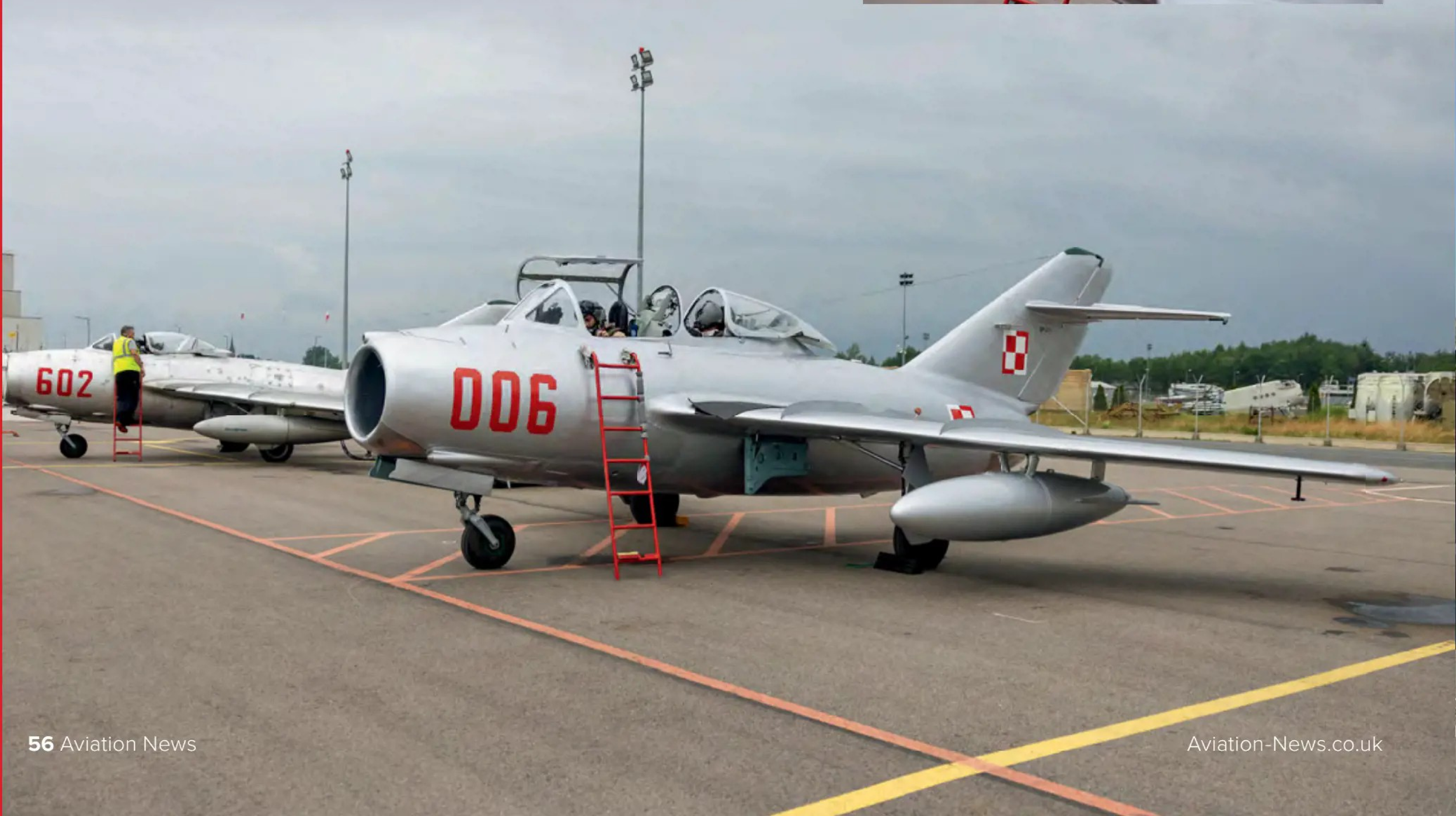
Lim-5... soon!

After acquiring and restoring both single and double-seater versions of Lim-2, in 2023 the foundation purchased Lim-5, tail number 1211 (financed by Fubar Aviation).

The aircraft was originally based in the hangar at UK's North Weald airport in Essex and, on initial inspection, the pilots and technicians assessed it to be in very good shape, the majority of its recent life having been spent in a hangar, protecting it. The end of 2023 saw transportation of the aircraft via road to the hangar in Modlin, Poland, and the immediate start of the restoration. Originally, the aircraft was manufactured in Mielec (Poland) in 1958, flying with the Polish Air Force before ending its military life in a North Vietnamese Air Force paint scheme.

The restoration process included NDT tests to verify the integrity of the aircraft as well as rewiring of the installation and skin of the airframe. As of February 2025, wings were fully ready, while the works were focusing on the tail empennage and the afterburner. The aircraft will be fitted with modern Garmin avionics to certify it for IFR operations. Eventually, Lim-5 will also be repainted to its original Polish Air Force paint scheme.

The group of mechanics and the pilots themselves have worked on this project almost daily since the end of 2023 and the first flight is scheduled for May this year. Plans include dynamic displays at airshows in Europe and the UK, both in 2025 and 2026, with both solos and formations of the three Lim aircraft.



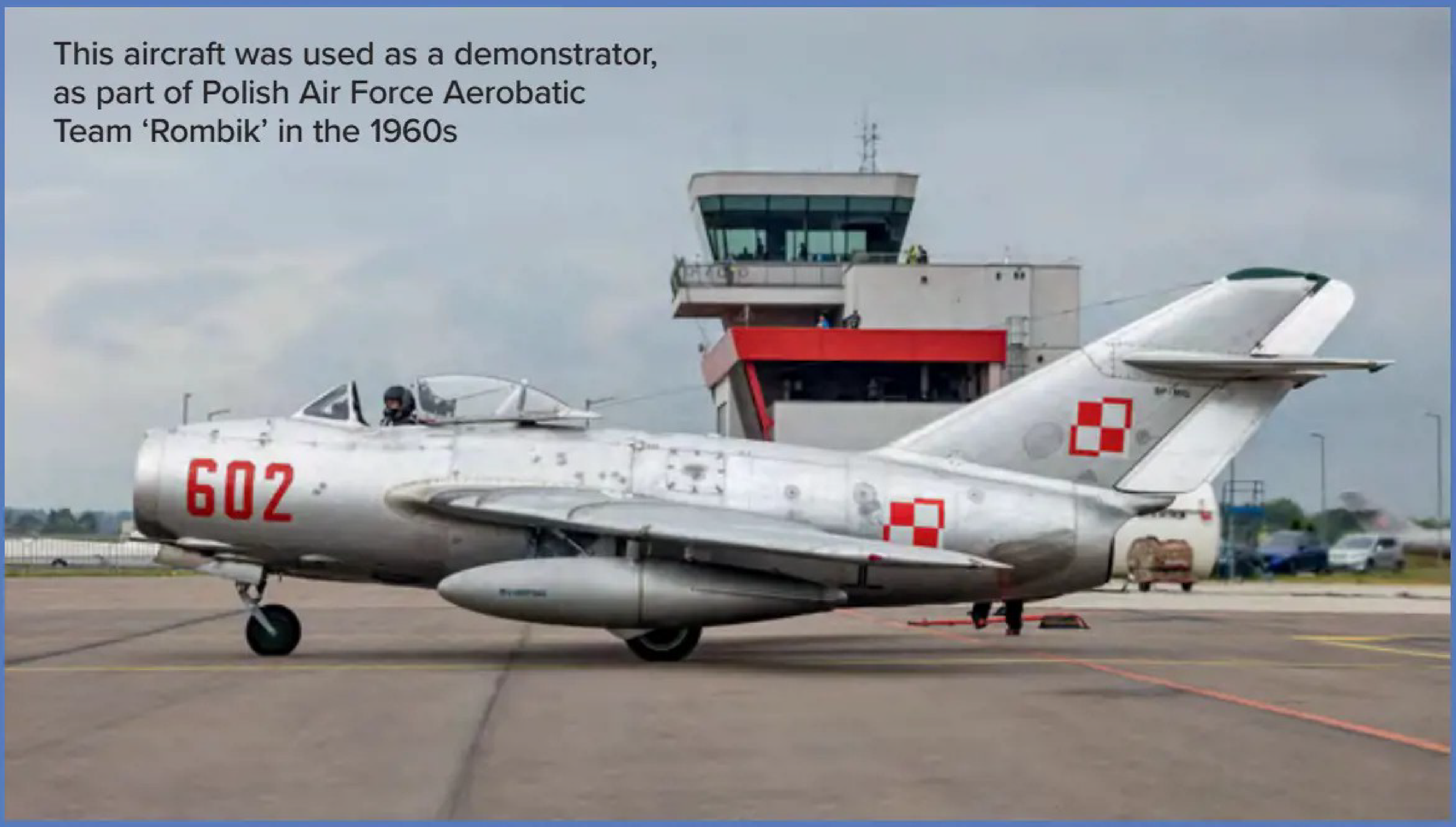
Where and why

As you can guess, nowadays Lim-2s are most often found at air shows, where pilots are delighted to showcase them. Mateusz said: "Everywhere we go we can see a lot of people's connections with these aircraft – viewers come up to us and say that their father or grandfather flew these machines, their uncle serviced them. Both aircraft types were the backbone of the air force in the past and until recently. Most currently flying pilots encountered them during their journey."

In addition to demonstrations, pilots also carry out familiarisation flights for passengers daily. The Squadron Foundation is developing a training programme for this type of aircraft, which will be quite a treat for aviation enthusiasts and pilots. On several occasions, foundation pilots have joined with the Polish organisation, the White-Red Wings Foundation, flying together in multi-ship formations of Lim-2s and other aircraft, such as F-86 Sabres or TS-11 Sparks, during various events on the airshow circuit.

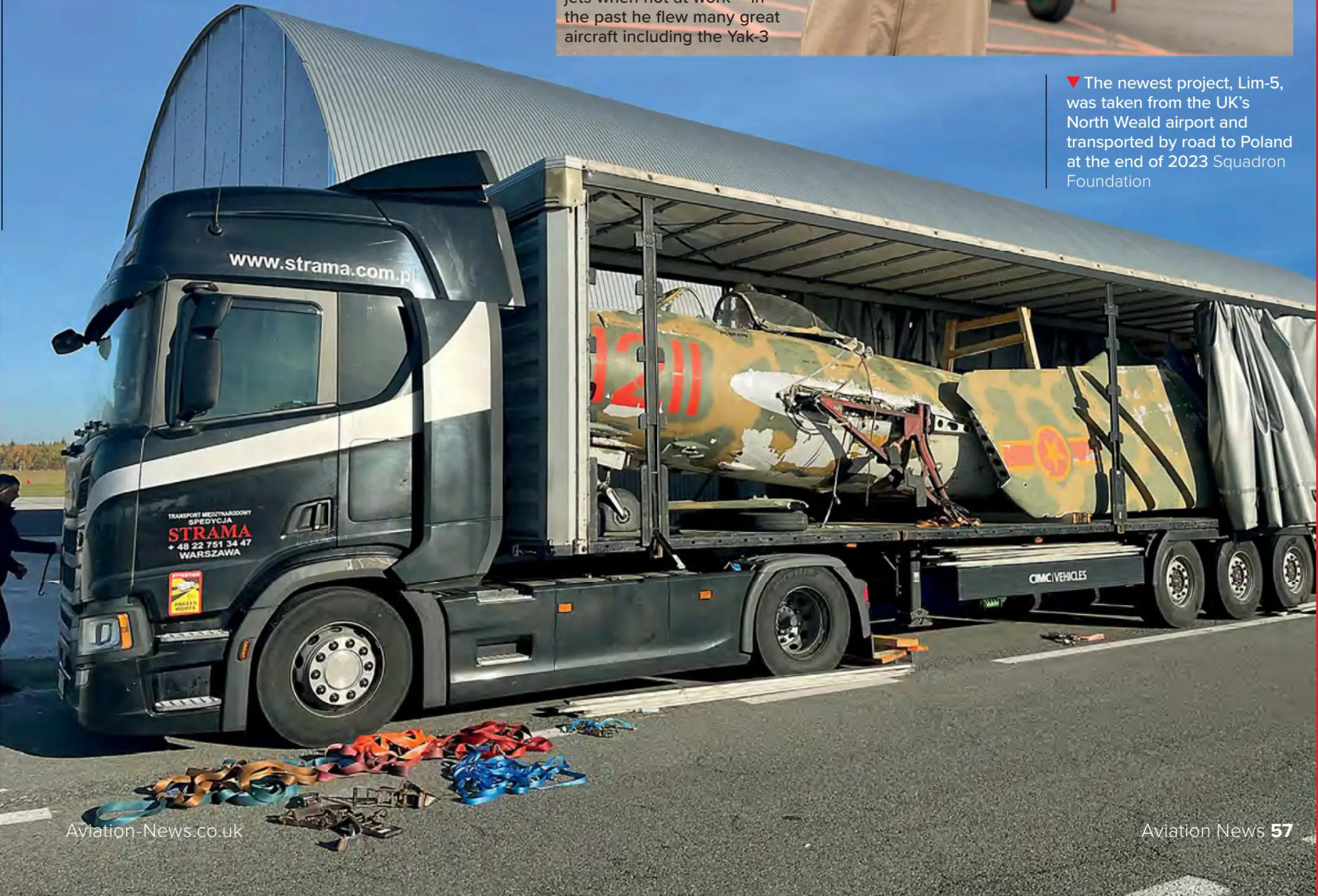
The Squadron Foundation plans to stay in Warsaw-Modlin. The future, as mentioned, is very ambitious but is certainly looking bright… preserving Polish aviation history and watching such unique machinery grace the skies above Poland and wider Europe.

The author would like to thank the Squadron Foundation and White-Red Wings Foundation for their help with the air-to-air photo shoot, as well as CamCam and ProClub for their technical support.



This aircraft was used as a demonstrator, as part of Polish Air Force Aerobatic Team 'Rombik' in the 1960s

Mateusz Strama flies daily with airlines, and SB Lim-2 jets when not at work – in the past he flew many great aircraft including the Yak-3



▼ The newest project, Lim-5, was taken from the UK's North Weald airport and transported by road to Poland at the end of 2023 Squadron Foundation

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OVER THE FENCE; AT MEIRINGEN

Some great imagery of the Fliegerstaffel 19 ‘Snow Tigers’ F-5Es that deployed as target tugs at Meiringen in early February. The targets towed by the F-5s were for training the F/A-18C Hornets based at Militärflugplatz Meiringen. **Chris Melaisi** took photos set against the beautiful alpine backdrop

Northrop F-5E Tiger II J-3082 departs Meiringen as ‘SHARK61’

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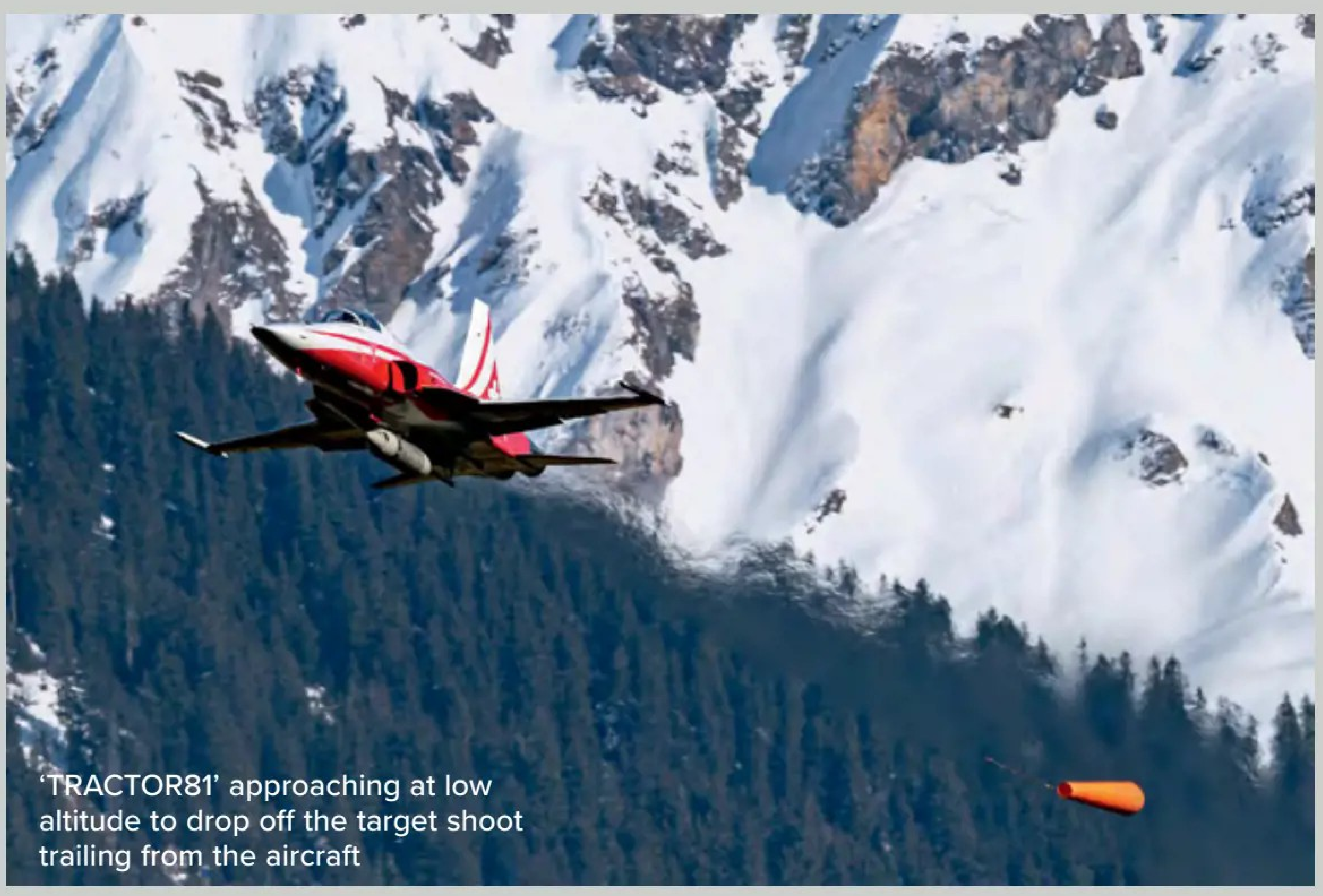
A Fliegerstaffel 11 F/A-18C pilot whose helmet clearly shows the unit’s heritage as a NATO Tiger squadron

‘BLADE21’ departs against the alps on a sortie to the Axalp firing range All images Chris Melaisi

F-5E Tiger II J-3080 departs Meiringen at sunset

‘HERON 32A’ sits on Meiringen’s runway 22 for departure to the Axalp firing range



‘TRACTOR81’ approaching at low altitude to drop off the target shoot trailing from the aircraft

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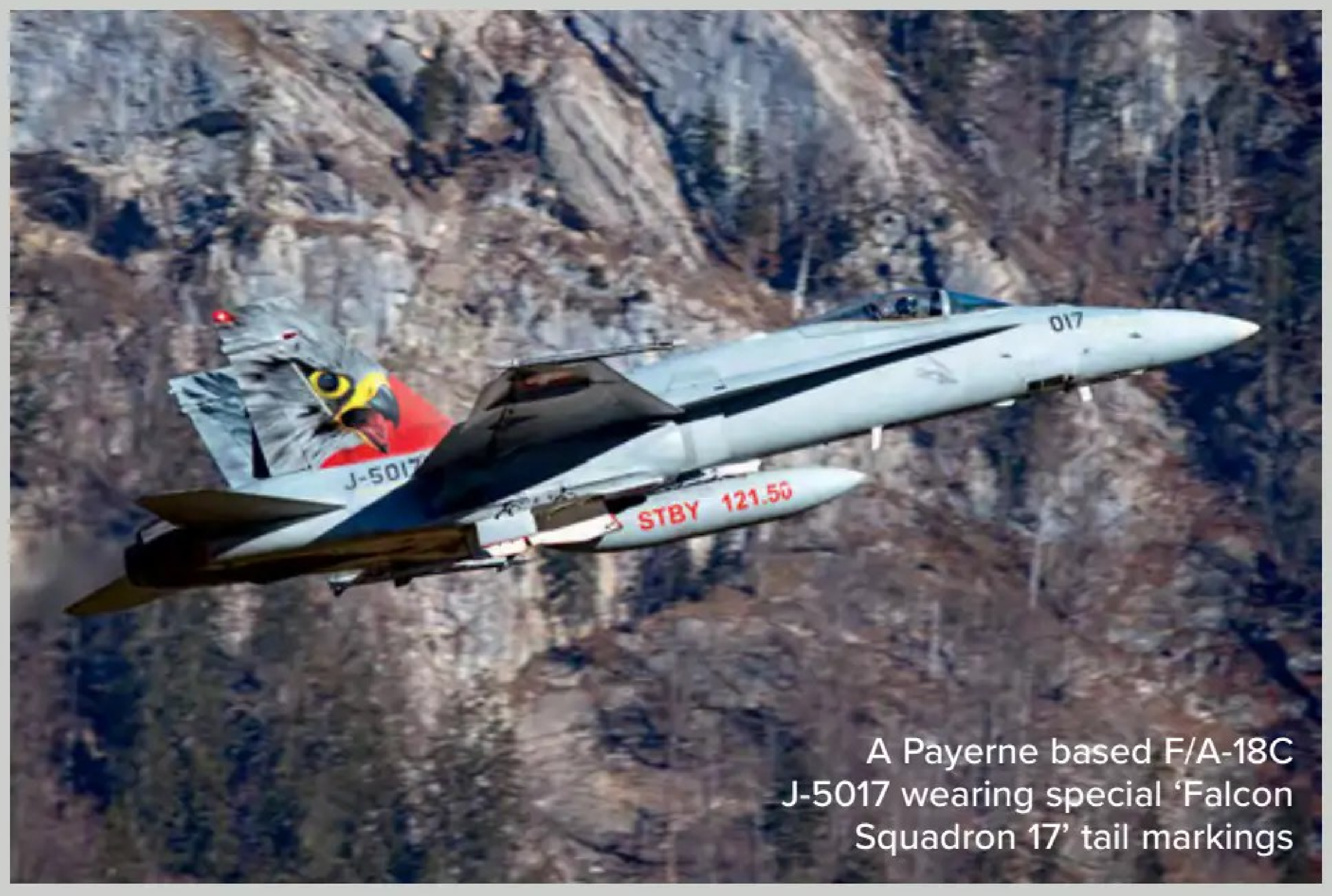
J-5016 in the final stages of retracting its gear and heading out to the Axalp range



A Payerne based F/A-18C J-5017 wearing special ‘Falcon Squadron 17’ tail markings

China's new era

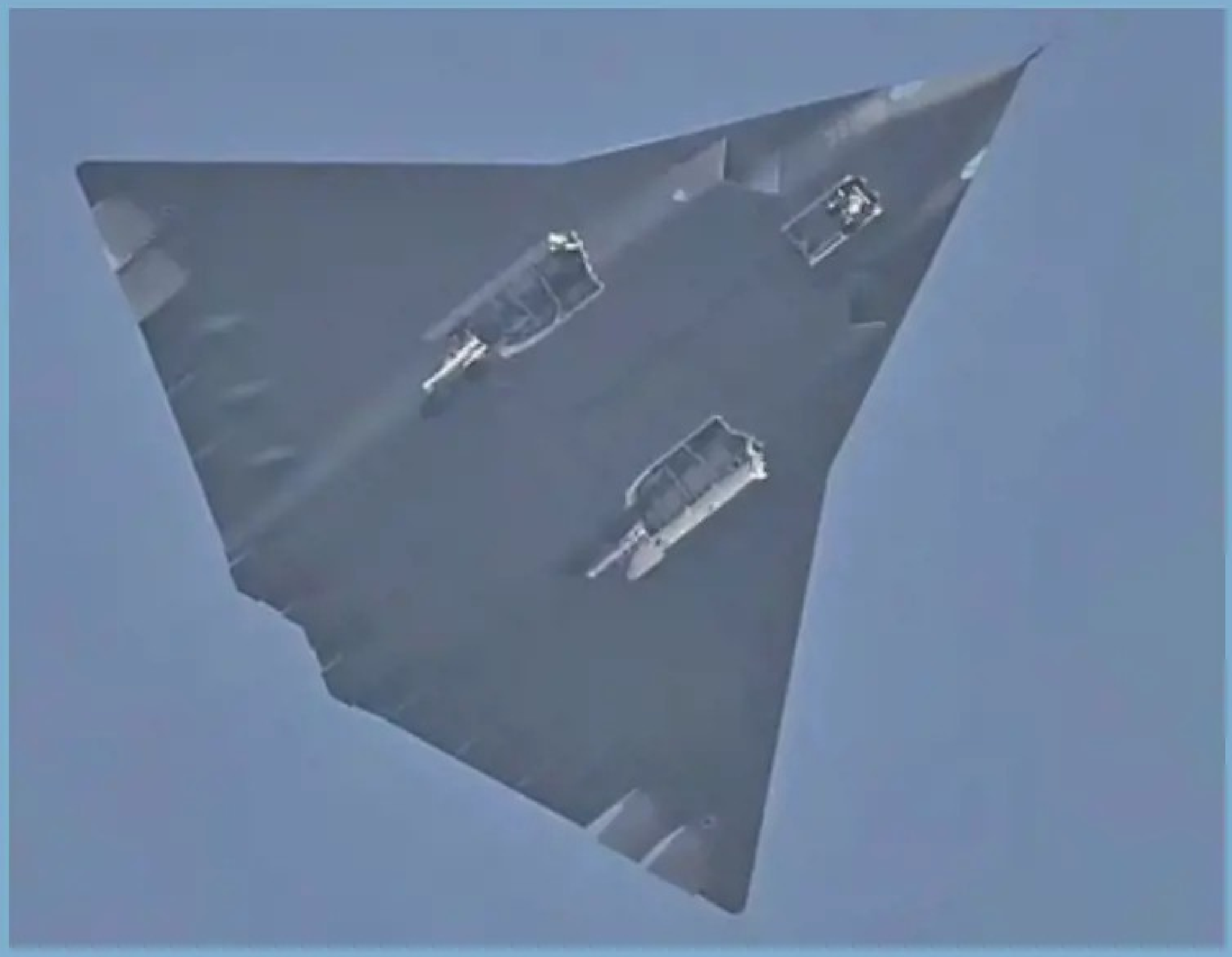
Two more advanced Chinese aircraft were revealed in December 2024, but were they fighters or bombers? **Andreas Rupprecht** analyses the evidence

▲ Several Chinese artists have rendered impressions of the two new fighters and this one is one of the most reasonable and realistic All images, Chinese internet

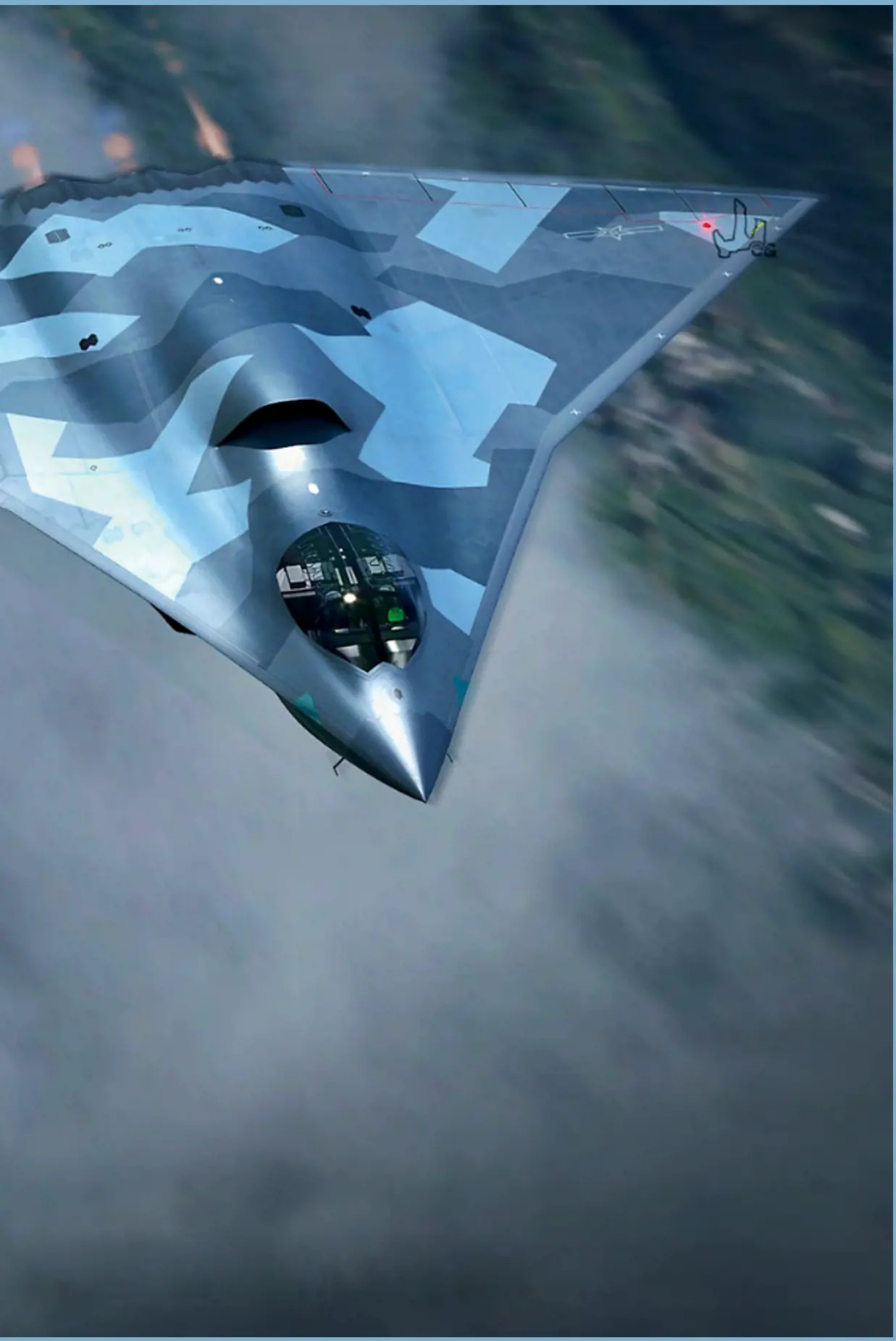
China has once again defied expectations by unveiling not one, but two next-generation fighter prototypes, mirroring the surprise introduction of the Chengdu J-20 in 2011. While many analysts and military officials predicted that a Chinese counterpart to the US New Generation Air Defense (NGAD) programme would take years to surface, China has made significant advances with two distinct prototypes from Chengdu Aerospace Corporation (CAC) and Shenyang Aircraft Corporation (SAC). This marks a major milestone in China's military aviation development, reflecting a unique vision for future aerial combat.

CAC's J-36: a revolutionary design

The first of the new fighters, the CAC J-36, made its maiden flight on December 26, 2024. Leaked images and videos revealed a black, tailless, delta-shaped aircraft with a highly swept flying wing configuration. The design is particularly distinctive due to its three-engine design, fed by two prominent variable caret

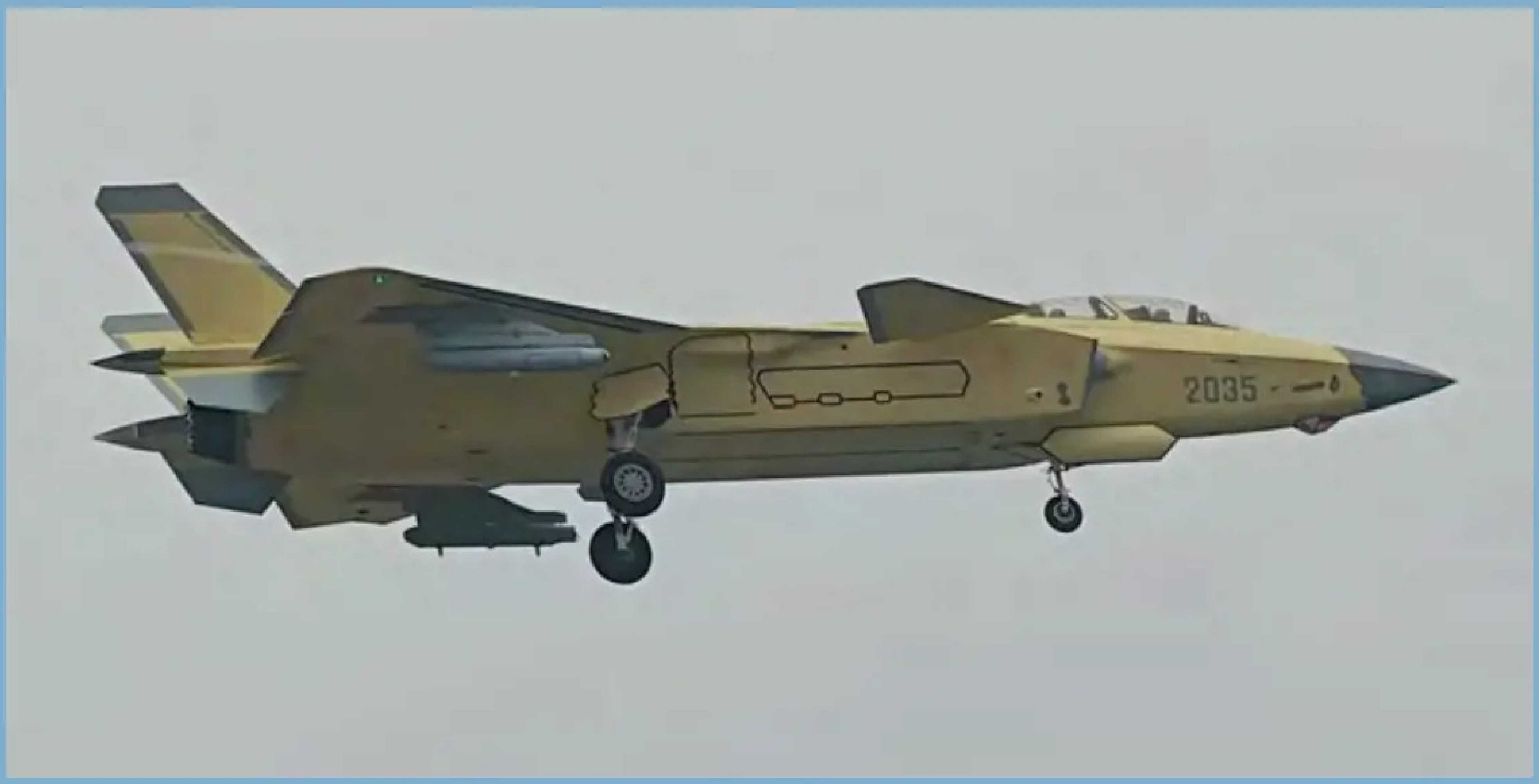


▶ The J-36 prototype seen on its maiden flight on December 26



intakes on either side and a third dorsal DSI intake behind the cockpit. This unique configuration sparked speculation about its intended role and performance.

▼ The almost unnoticed J-20S used as a chase aircraft on the day of the J-36 maiden flight



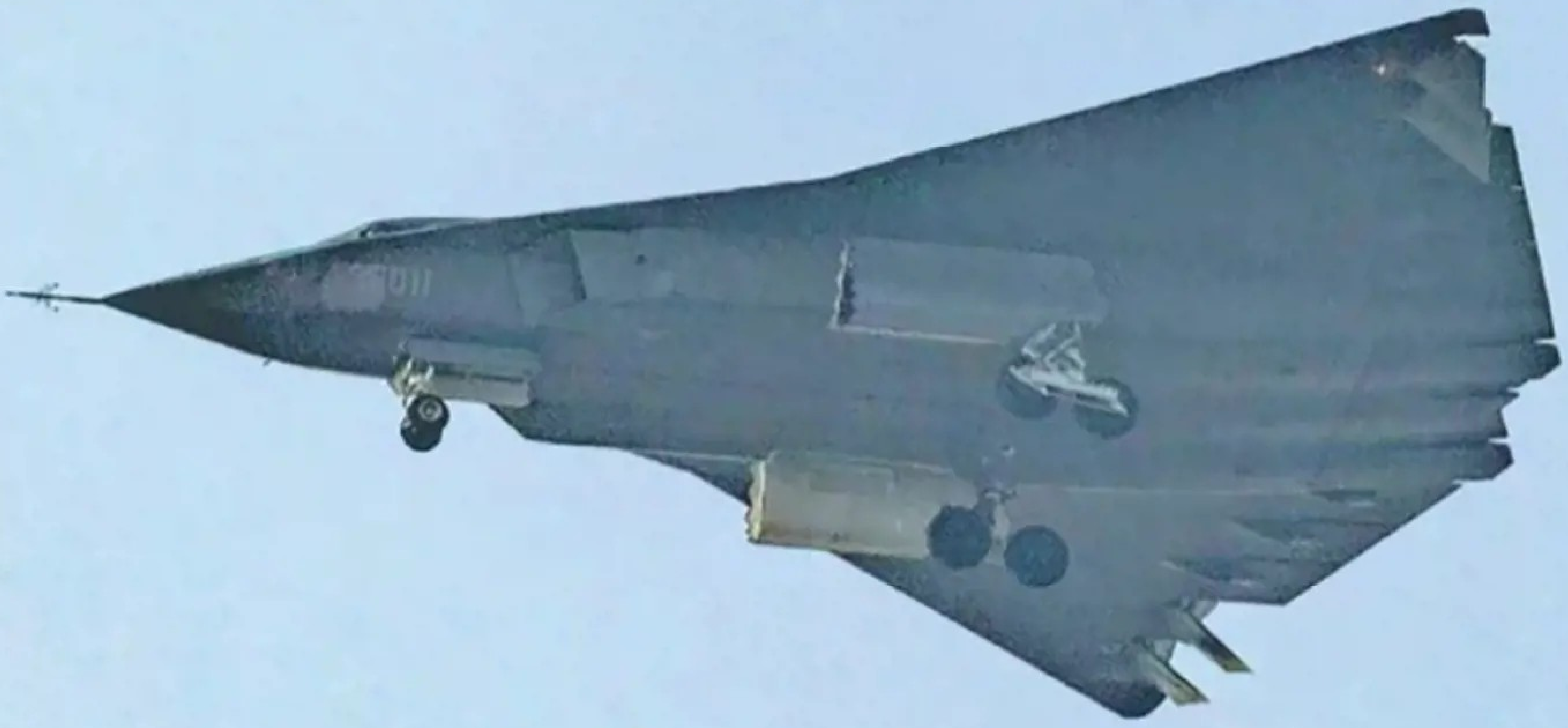
Acting as a chase plane was the J-20S twin seater, which was a news item itself and was almost unnoticed due to the surprise of the J-36. The J-20S was unveiled at the Zhuhai Airshow 2024, but some interesting new developments were noticed on December 26. At first sight, it was just another new yellow prototype, but on closer examination it was revealed to be a brand-new prototype, number '2035', completing the list of known prototypes to five aircraft. It seems to be the first one powered by the latest WS-15 engines. Now using the same engine as the latest single-seater J-20A and additionally also featuring the same broader beak-like radome, makes it likely it is no longer a J-20S but at least a J-20AS.

Rumours about the J-36's development surfaced as early as 2018, with satellite images in 2021 hinting of the existence of a sub-scale demonstrator. However, the new aircraft is different and significantly larger than the J-20 reportedly, estimated at around 22-24m in length and with a similar wingspan, with a weight exceeding 50 tonnes. It features an advanced avionics suite, including an active electronically scanned array (AESA) radar, electro-optical targeting systems (EOTS) and hexagonal side-looking conformal antennas. The aircraft's large internal volume suggests a substantial fuel capacity and weapons bay, capable of carrying PL-17 VLRAAMs, PL-15/-16, and PL-10 air-to-air missiles.

The J-36's three-engine design is one of its most debated aspects. Some analysts believe the additional engine is meant to generate sufficient electrical power for advanced radar and avionics, rather than simply enhancing speed. Others suggest that the aircraft's configuration is optimised for a combination of high-speed operations and sustained endurance. The aircraft is expected to supercruise at high speeds and reach a maximum of more than Mach 2. Reports indicate the use of WS-15 turbofan engines, with possible thrust vectoring for enhanced maneuverability and a variable cycle engine at a later date.

In terms of aerodynamics, the J-36's control surfaces are interesting. They feature six actuator control flaps and four pairs of split drag rudders at the wingtips, in addition to large landing gear doors to enhance stability at low speeds during landing. The trailing edges of the wings are believed to incorporate flexible control surfaces to assist with high-speed flight stability and agility. Additionally, its infrared signature appears to be minimised by shielding the engine exhaust under the trailing edge, a design reminiscent of the Northrop YF-23.

The role of the J-36 remains a topic of discussion. While some Western analysts suggest it might be a bomber, Chinese sources describe it as an advanced fighter designed for air dominance beyond the first island chain. It is expected to engage with other stealth aircraft and loyal-wingman UAVs to conduct deep-penetration strikes. As part of China's broader air superiority strategy, it would likely complement the J-20A and later J-20S, offering extended command and networking capabilities. Some Chinese experts have even labeled it an 'airborne cruiser' due to its multi-role capability and long-range operational profile.



▲ This is one of the clearest images of the J-36 prototype 36011, clearly showing the unique pairs of split drag rudders at the wingtips

◀ Only a handful of small and blurry images of SAC's new fighter are available, but it appears to be a heavy tailless fighter similar in size to a J-16

SAC's mystery fighter

Shortly before the J-36's unveiling, blurry images suggested that SAC had also test-flown its own sixth-generation fighter. Initially dismissed as fake, clearer imagery and video clips posted also on December 26, 2024, confirmed its existence. Unlike the J-36, SAC's aircraft remains shrouded in mystery, with uncertainty over whether it is manned, unmanned or optionally piloted.

SAC has long been associated with stealth fighter-bomber concepts like the JH-XX, dating back to the 2000s. Some speculate this new fighter could be an evolution of those designs. The aircraft features a lambda-wing configuration without vertical or horizontal stabilisers and a pair of V-shaped DSI engine intakes extending to the engine nozzles. Reports suggest it is powered by two WS-15 engines with thrust vector control.

Compared to the J-36, SAC's fighter appears to emphasise maneuverability over range and payload. Its tailless design suggests a high level of stealth optimisation, with all-moving surfaces and leading-edge extensions that could improve agility. The aircraft likely features a sophisticated sensor suite with advanced networking capabilities, allowing it to act as a command-and-control node for drone swarms and other aerial assets. Some reports indicate it may also be a contender for a carrier-based stealth fighter, potentially complementing the smaller J-35 on China's future carriers.

Strategic and technological implications

The unveiling of these two aircraft has sparked an intense debate. Some rate this as a sign that China is surpassing the US in military aviation, while others compare it to the Soviet MiG-25 moment that led to the development of the F-15. Critics argue that the three-engine design suggests China still lags in engine technology, while proponents highlight China's growing aerospace competence. In fact, we still don't know enough about the new aircraft to reach confident conclusions.

The strategic implications of these developments are profound. Both fighters indicate a shift toward a network-centric warfare model, where manned fighters act as command nodes for autonomous drones and other supporting assets. This aligns with global trends in next-generation air combat, where information dominance and multi-platform co-ordination are as crucial as raw flight performance.

Yang Wei, chief designer of the J-20, suggests that the new aircraft are designed to penetrate heavily defended airspace, guide drone swarms and engage high-value targets at extended ranges. As such, the J-36 and SAC fighter represent a distinct Chinese approach to future aerial warfare, diverging from Western concepts. And China's ability to develop two complementing next-generation designs suggests significant industrial and technological maturity, further reinforcing its position as a leading military power.

One key takeaway is the clear distinction between China's approach and that of the US. While America has focused on its NGAD programme with a single winner expected, China appears to be pursuing multiple parallel designs to maximise capability and strategic flexibility. The public unveiling of these fighters could also be a political statement, signalling China's increasing confidence in its military-industrial base.

Looking ahead

As the development of these aircraft progresses, several key questions remain. Will both prototypes enter service, or will one be favoured over the other? How will they compare to Western sixth-generation aircraft in terms of performance and capability? Will China integrate these platforms into a broader strategy of unmanned warfare and AI-assisted combat operations? And, finally, when will all this happen?

The introduction of these two fighters marks a significant evolution in China's strategic posture, with far-reaching implications for regional security and future conflicts in the Indo-Pacific. With additional test flights and more detailed images expected in the coming months, the world will be watching closely as China's vision of next-generation aerial warfare unfolds.

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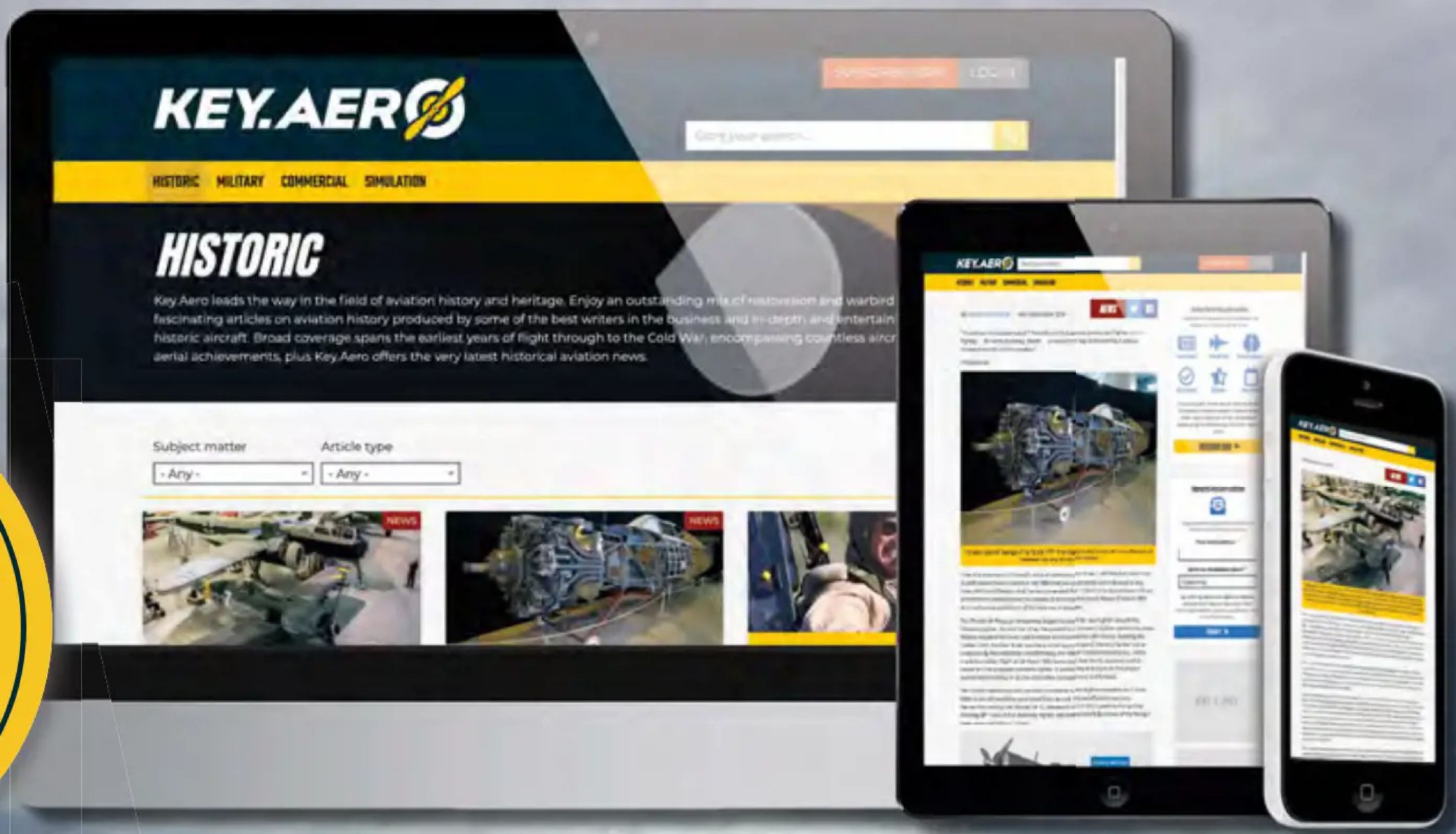
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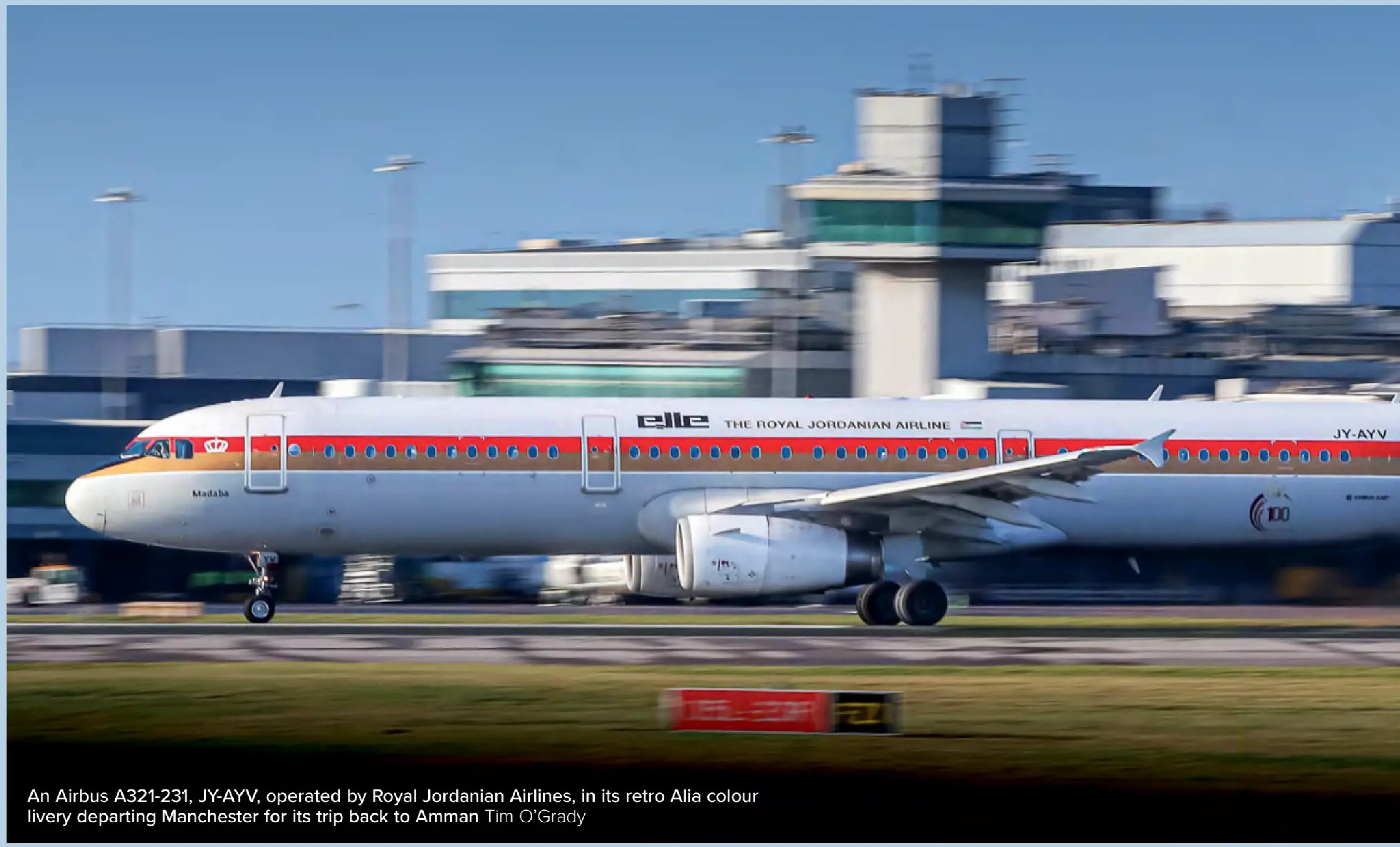
CIVILIAN MOVEMENTS

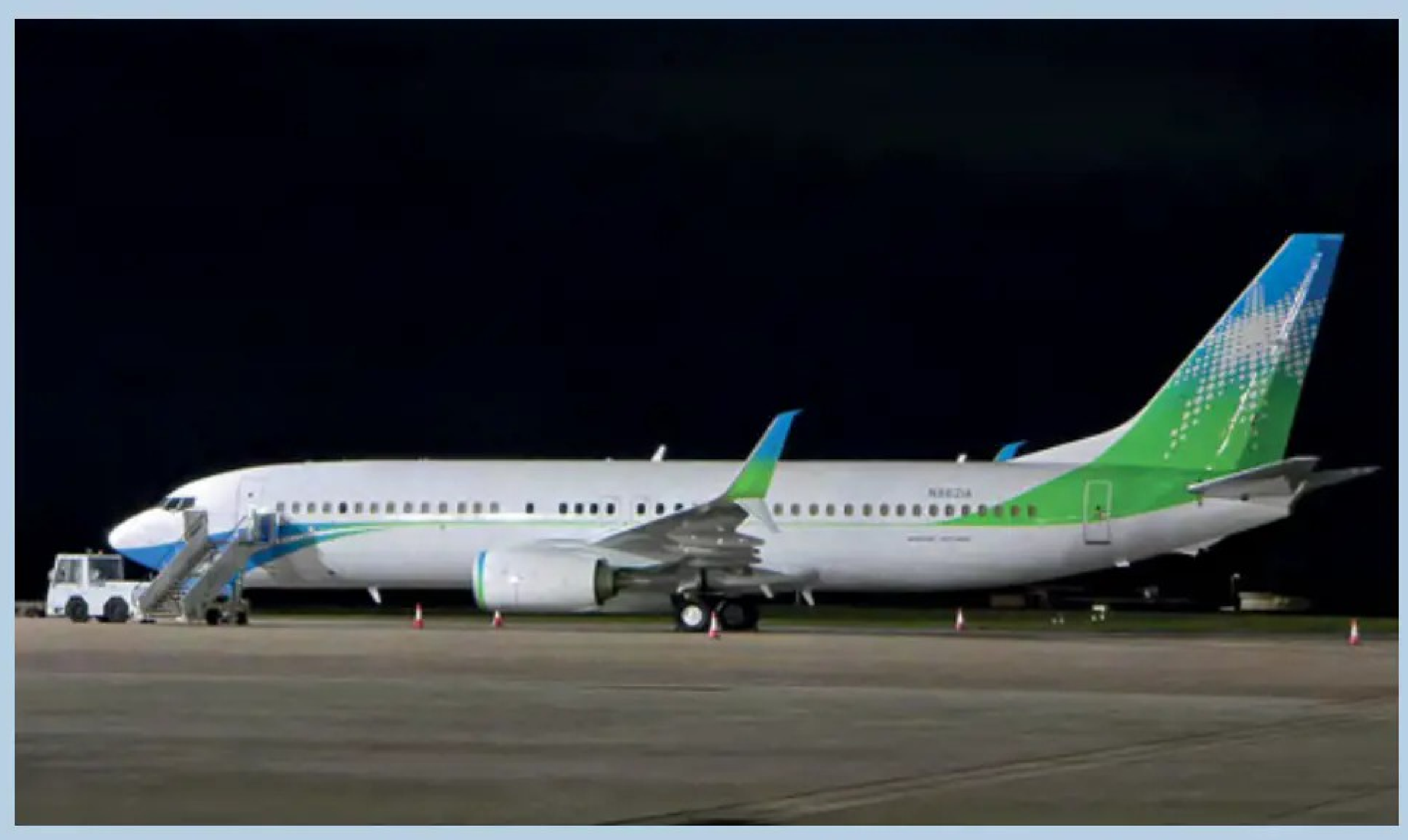
We showcase the rich diversity of aircraft movements up and down the UK

After Storm Éowyn in late January, repairs were needed at various locations around the UK. This bought a rather unusual movement of Bell 212, G-GIGB operating from a Manchester golf club car park. The month of February saw a nice mixture of rare visitors to airports around the UK.

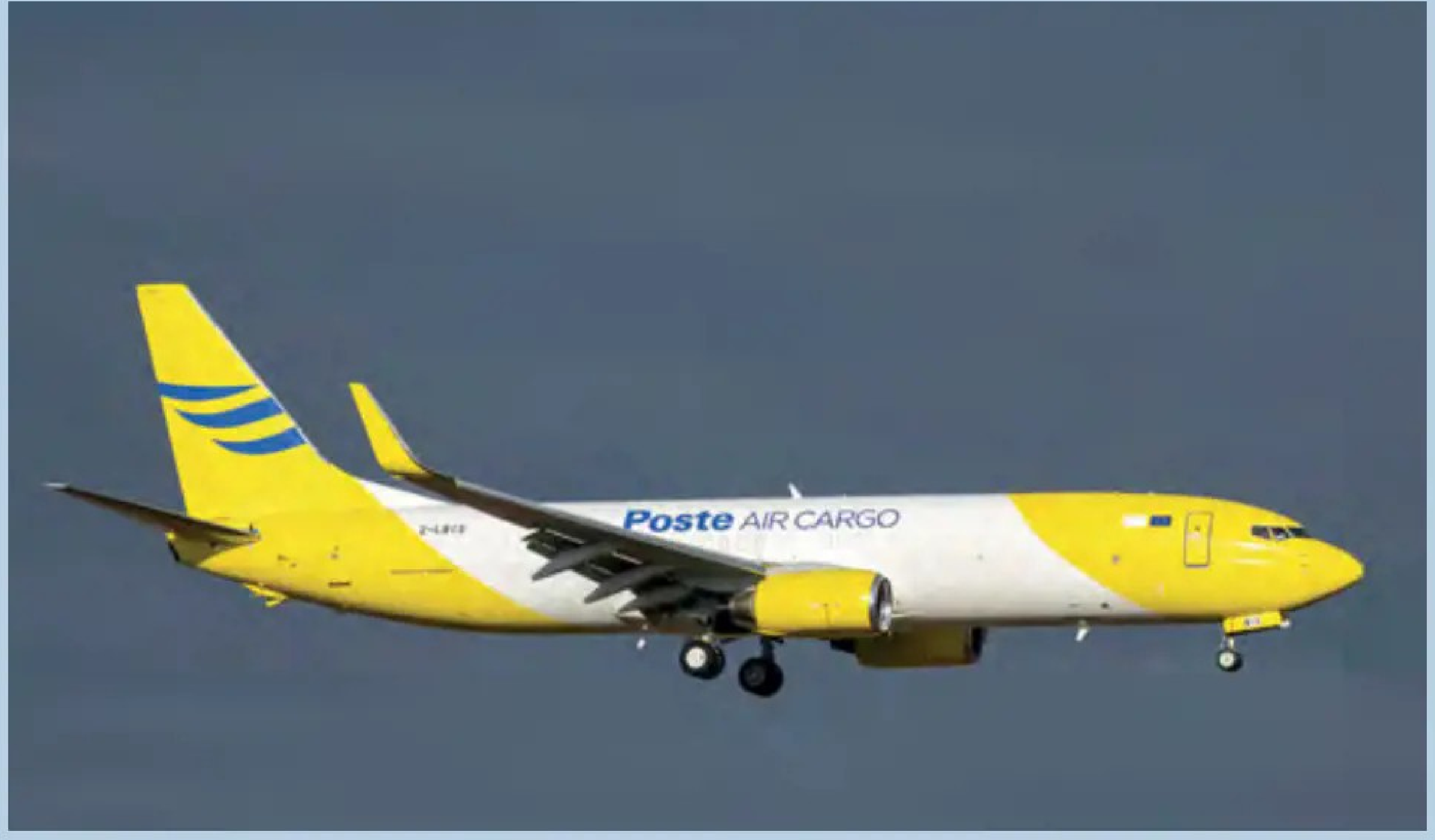
We welcome contributions from readers across the world. If you photograph an aircraft that is not in its usual location or could be of interest within the UK please email your images, without watermarks, to ben.hall@keypublishing.com or aviation-news@keypublishing.com using the subject heading *Just Passing Through*, with a short caption including as much information as possible. AN



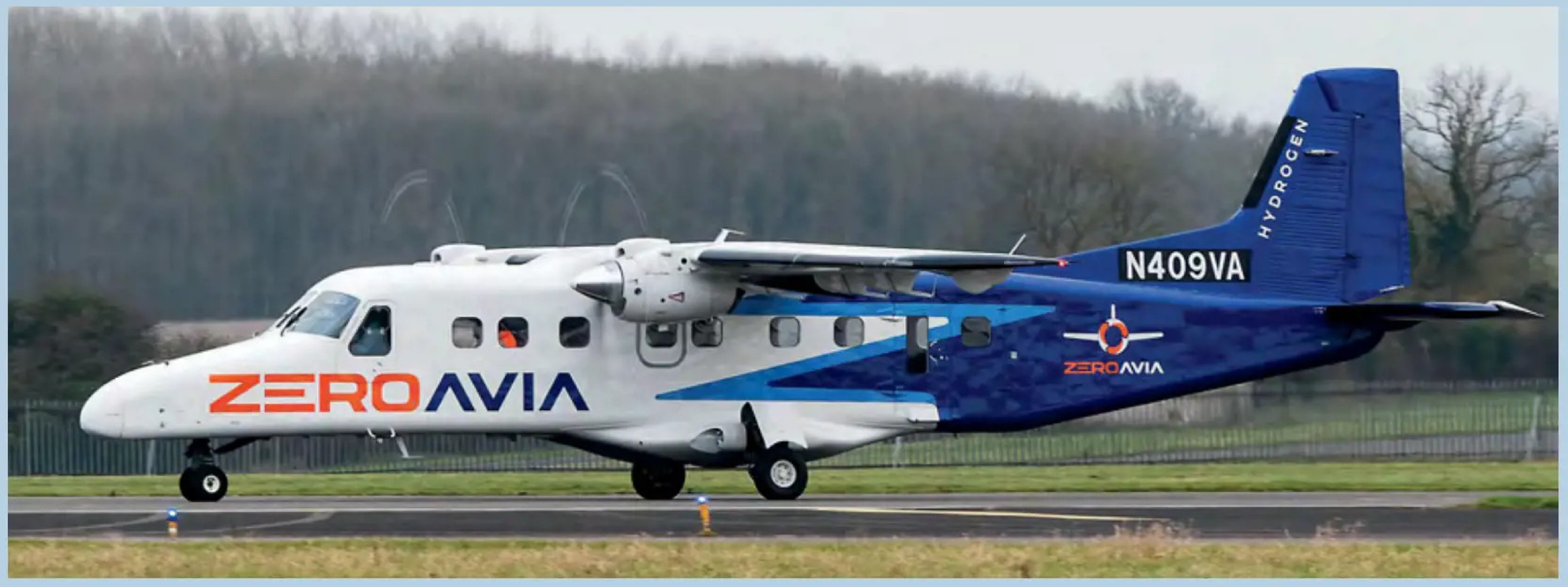
An Airbus A321-231, JY-AYV, operated by Royal Jordanian Airlines, in its retro Alia colour livery departing Manchester for its trip back to Amman Tim O'Grady



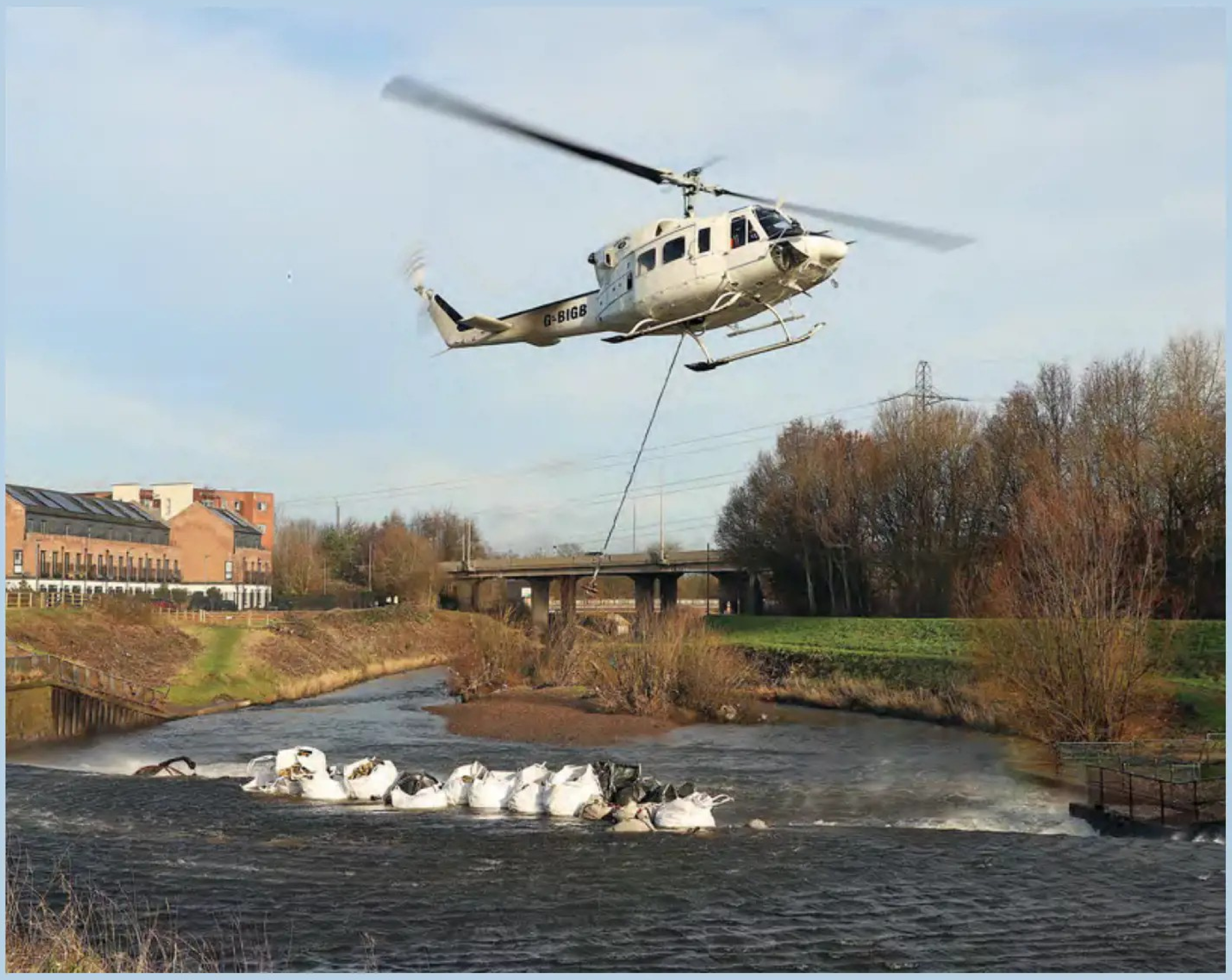
▲ Pictured during a night stop in Glasgow, this former Southwest Airlines Boeing 737-8H4 N8621A (cn 36917) was being delivered to a new operator, Aloula Aviation (previously Saudi Aramco). The aircraft arrived from Phoenix Goodyear via Bangor Stuart Haigh



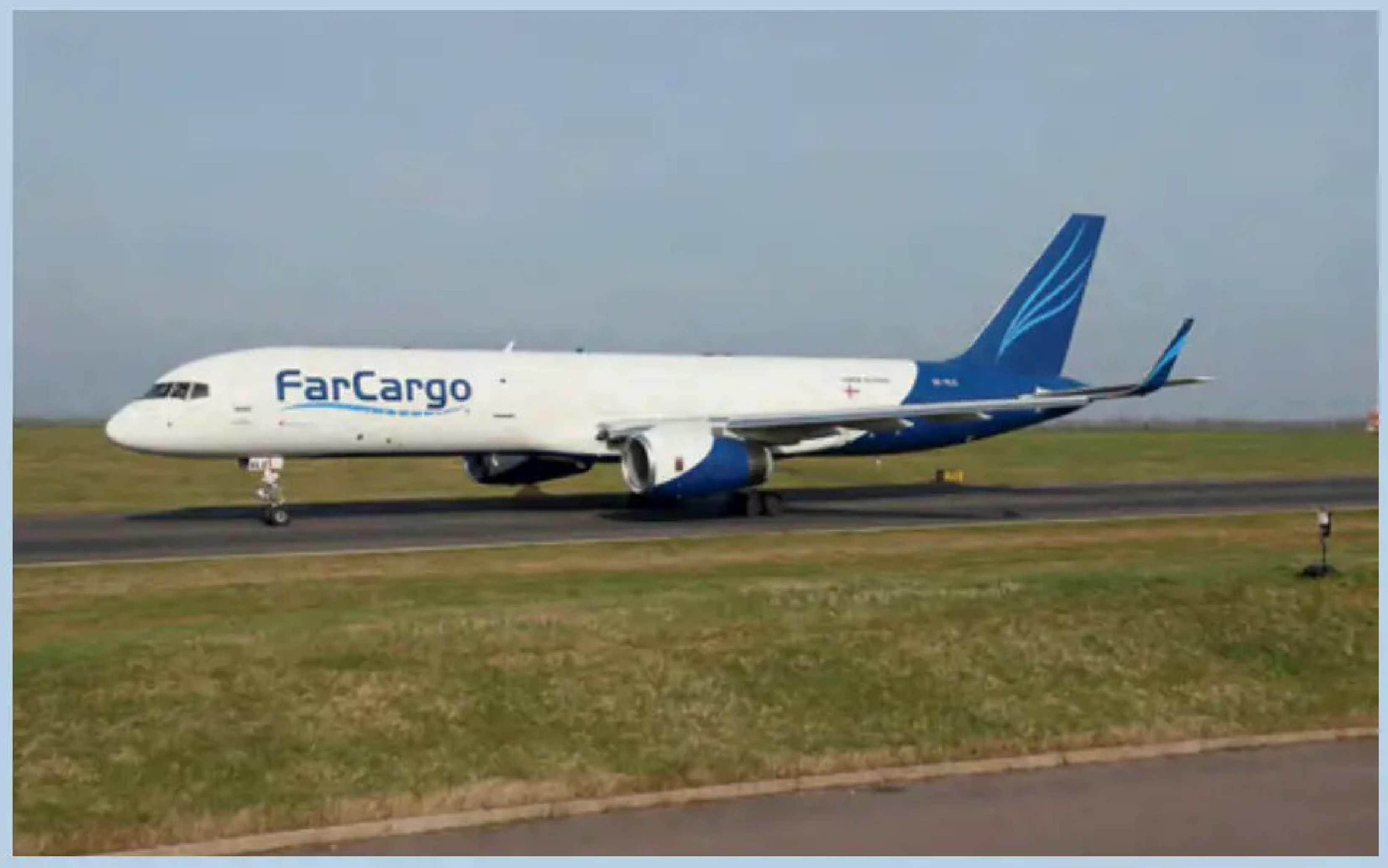
▲ Pictured on short finals to Prestwick was this Boeing 737-8EH (BCF) freighter conversion in the colours of Italian cargo operator, Poste Air Cargo. The aircraft is currently on the Guernsey register as 2-LBIS (cn 34281) and has spent most of the last couple of years in storage Stuart Haigh



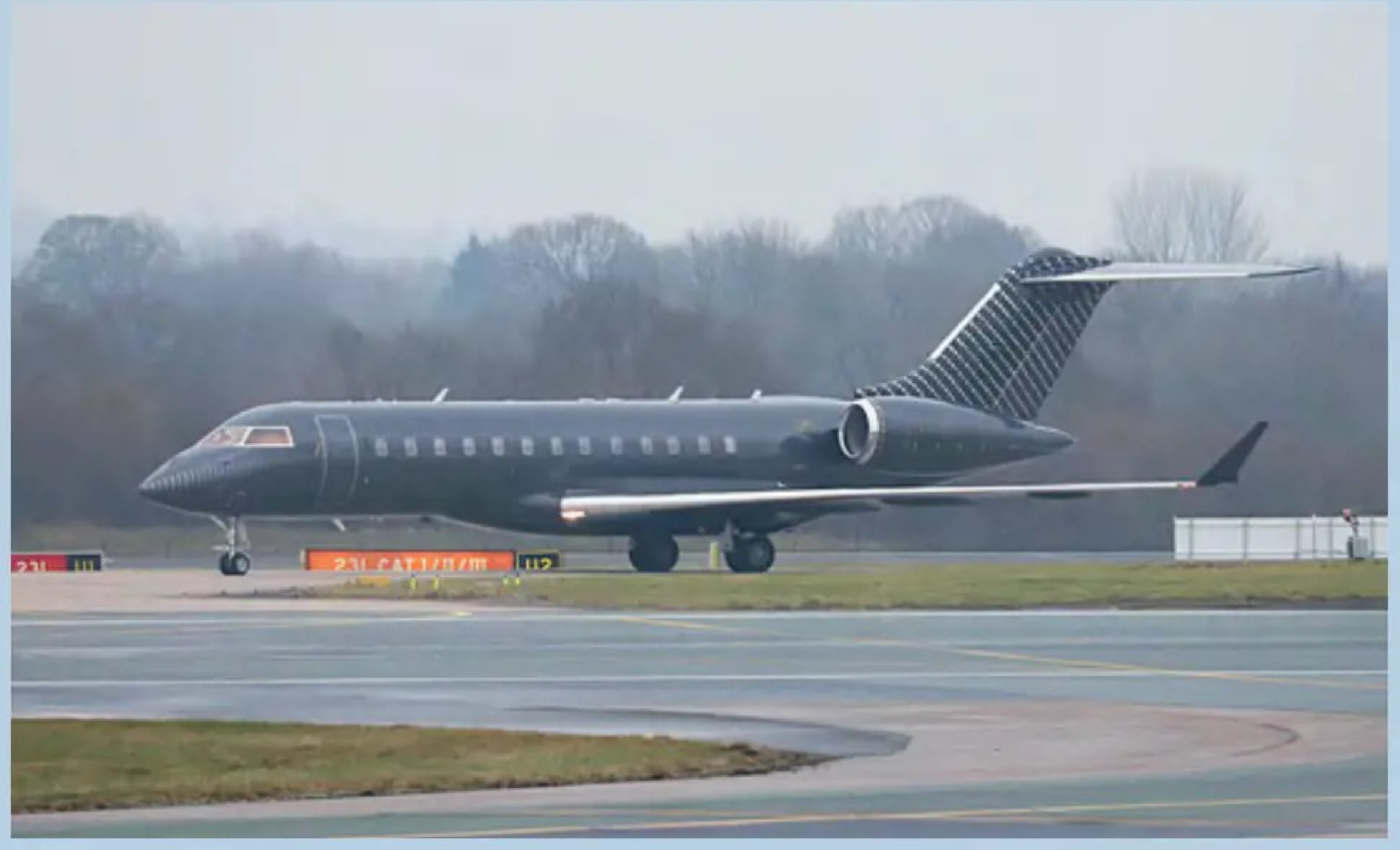
◀ Dornier 228, serial N409VA, belongs to ZeroAvia which designs and tests hydrogen-electric aircraft engines. Formerly owned by Vision Airlines of Nevada, United States, it was delivered to the UK testing facility in Kemble in June 2024. It only flew once until the first week of February where it was captured here returning from Germany Kyle Mckinlay



▲ A 48-year-old Helicopter, Bell 212 G-BIGB, was lifting and dropping bags of stone to repair the banks and weir of the River Mersey in Northenden, South Manchester after heavy rain. It used Withington Golf Club car park as a temporary base Greg Mape



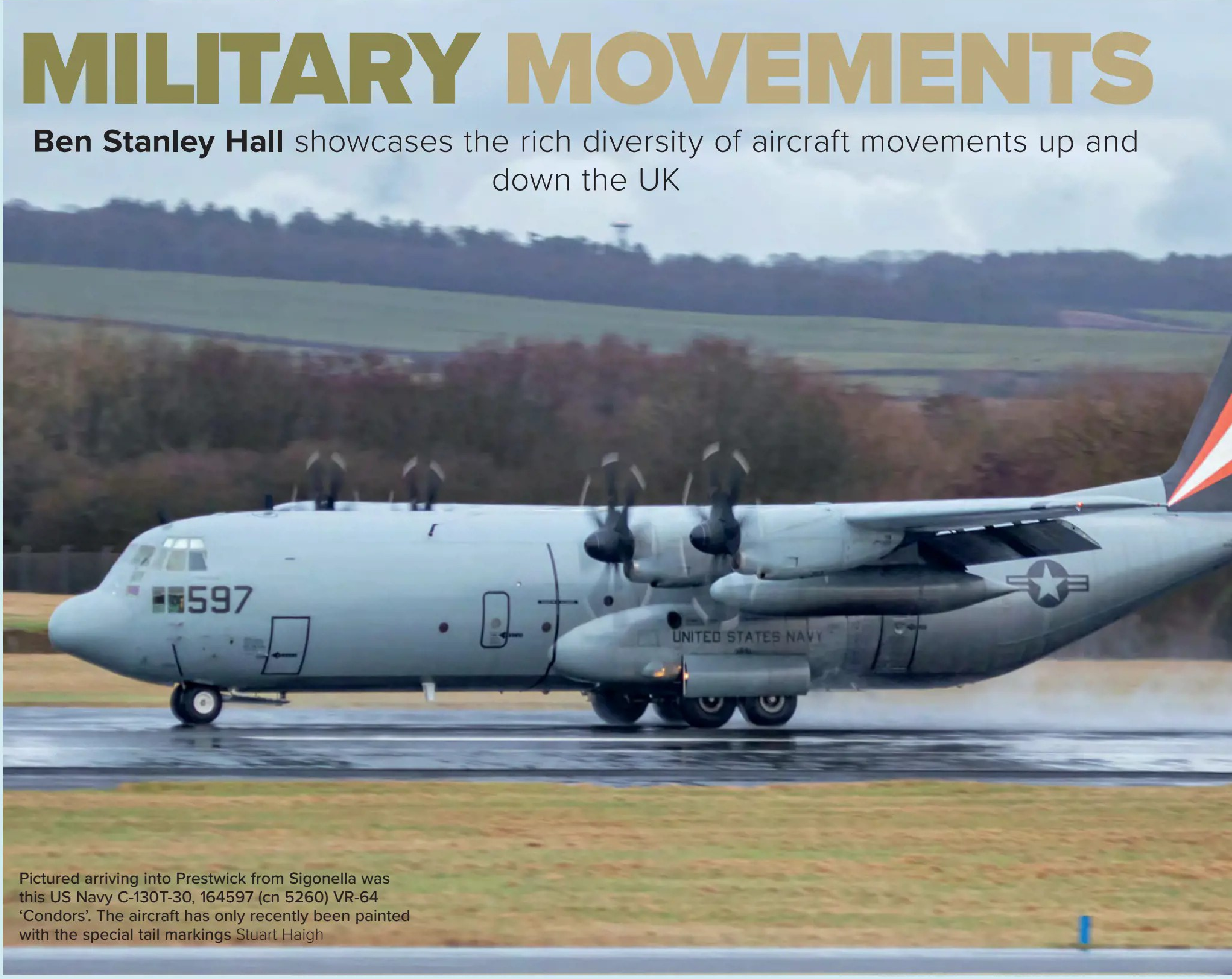
▲ SE-RLE, a 757-223(PCF) taxies in at East Midlands Airport on February 18 after arriving from Vágar in the Faroe Islands with a cargo of fresh Salmon Karl Nixon



▲ LX-GOL, a Bombardier Global Express XRS operating by Global jet lands at Manchester Airport. Note the CR7 logo on the forward part of the fuselage. Greg Mape

MILITARY MOVEMENTS

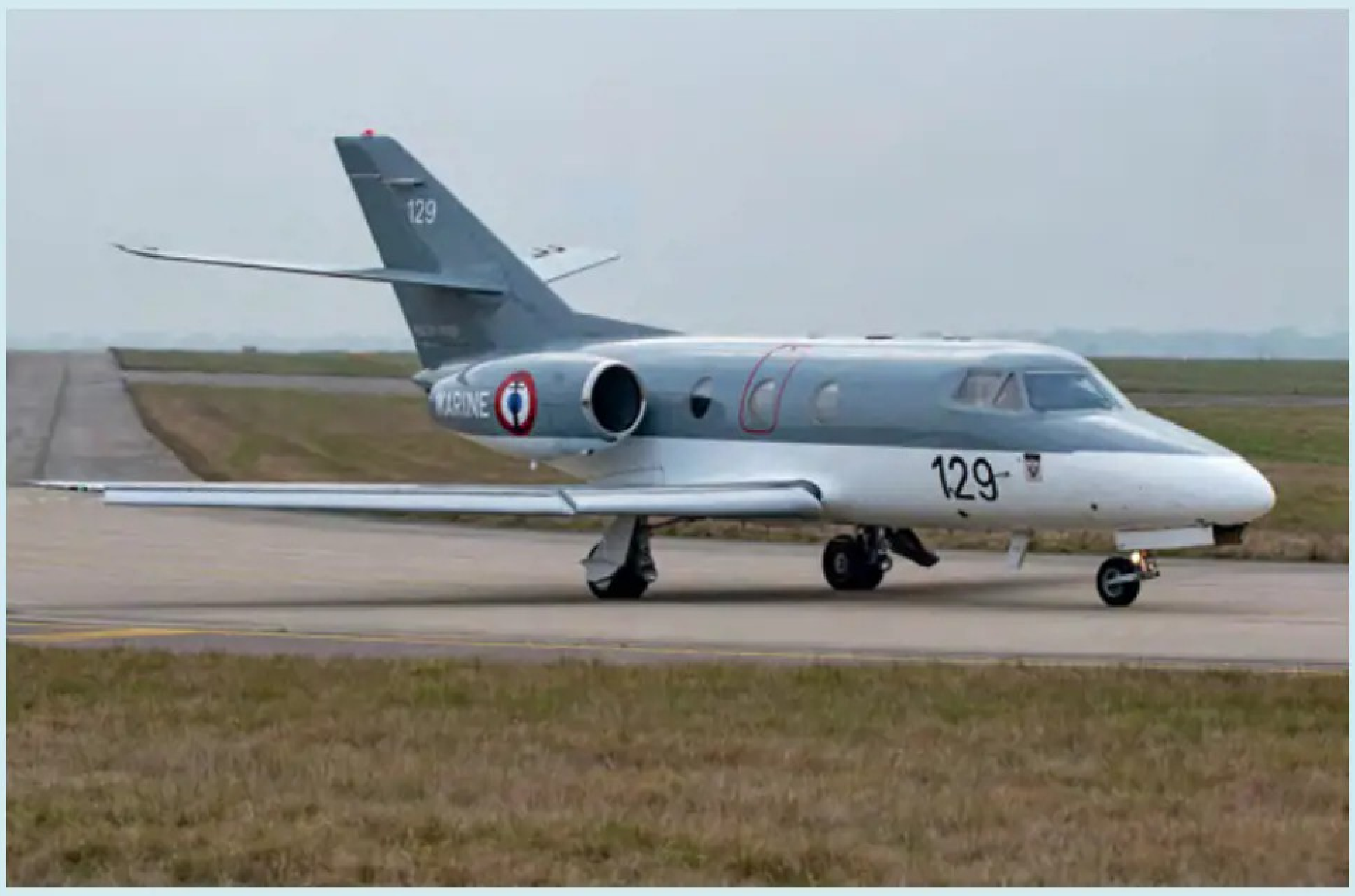
Ben Stanley Hall showcases the rich diversity of aircraft movements up and down the UK



Pictured arriving into Prestwick from Sigonella was this US Navy C-130T-30, 164597 (cn 5260) VR-64 'Condors'. The aircraft has only recently been painted with the special tail markings Stuart Haigh

This month's selection of aircraft movements ranges from support aircraft arriving for major exercise, Cobra Warrior to unusual visitors passing through a range of airfields the UK. Potentially the rarest visitor was the USMC KC-130J passing through Liverpool John Lennon Airport.

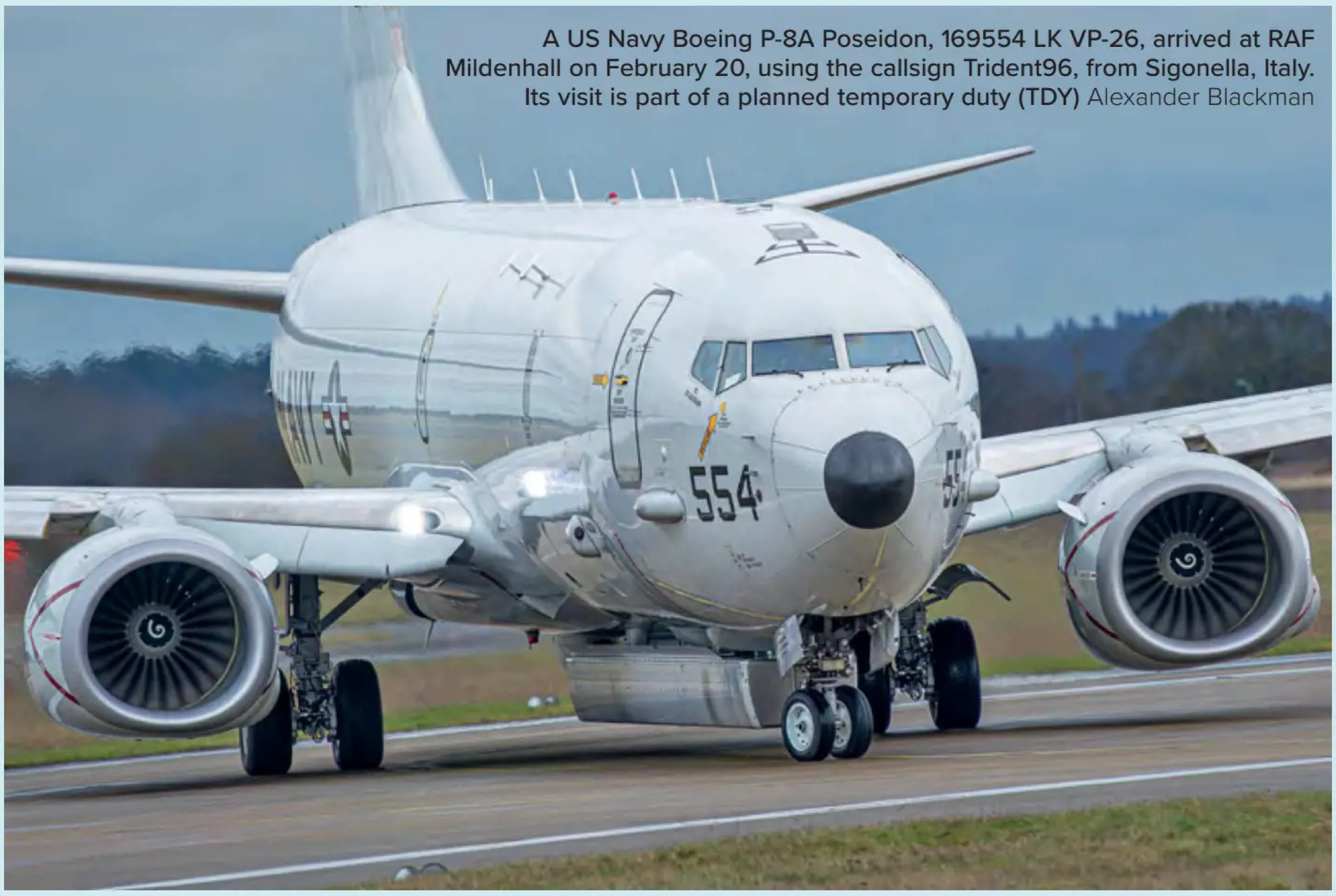
We welcome contributions from readers across the world. If you photograph an aircraft that is not in its usual location or could be of interest within the UK, please email your images, without watermarks, to ben.hall@keypublishing.com using the subject heading *Just Passing Through*, with a short caption including as much information as possible. AN

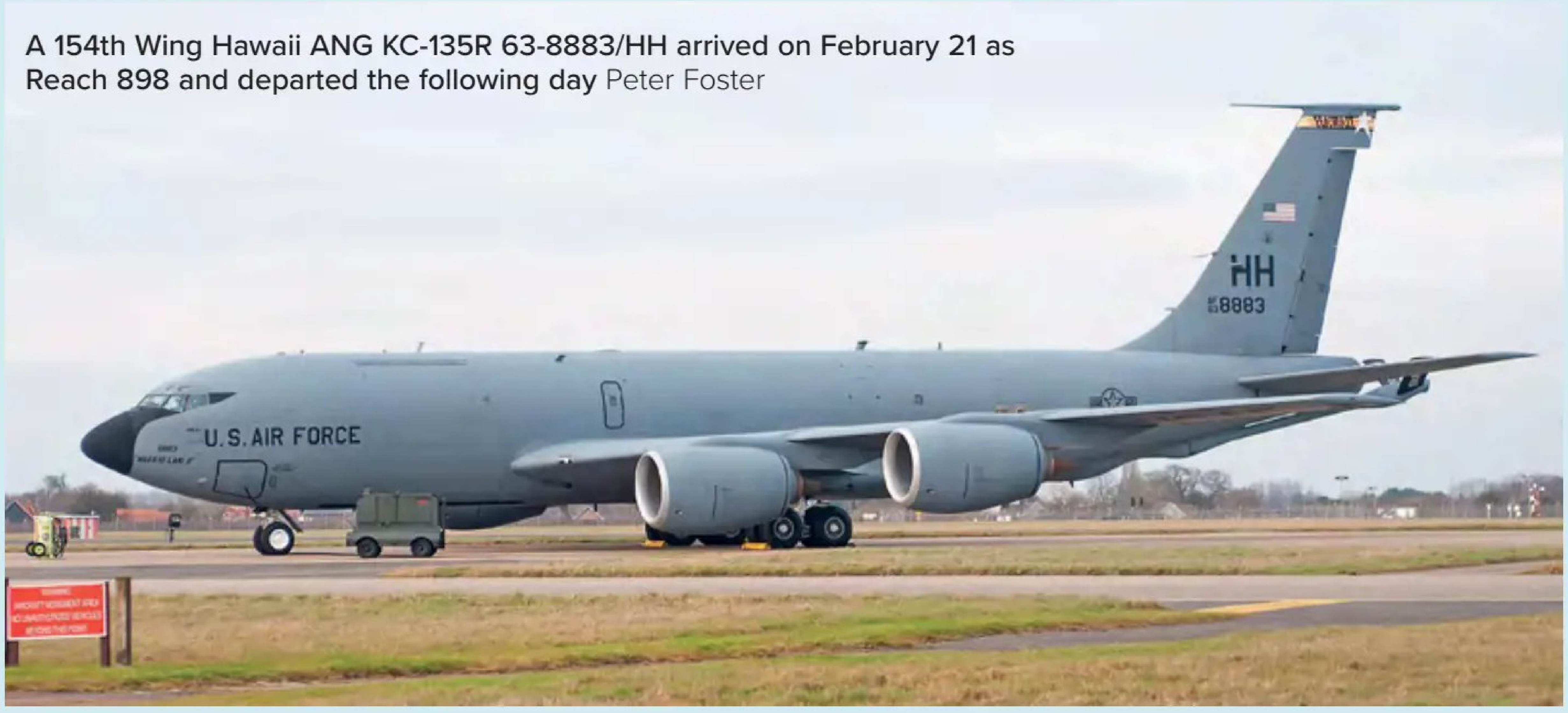


▲ Falcon 10 MER '129' from the Aeronavale, dropping a single passenger under callsign French Navy 5560 at RAF Waddington, Lincoln Michael Hiley

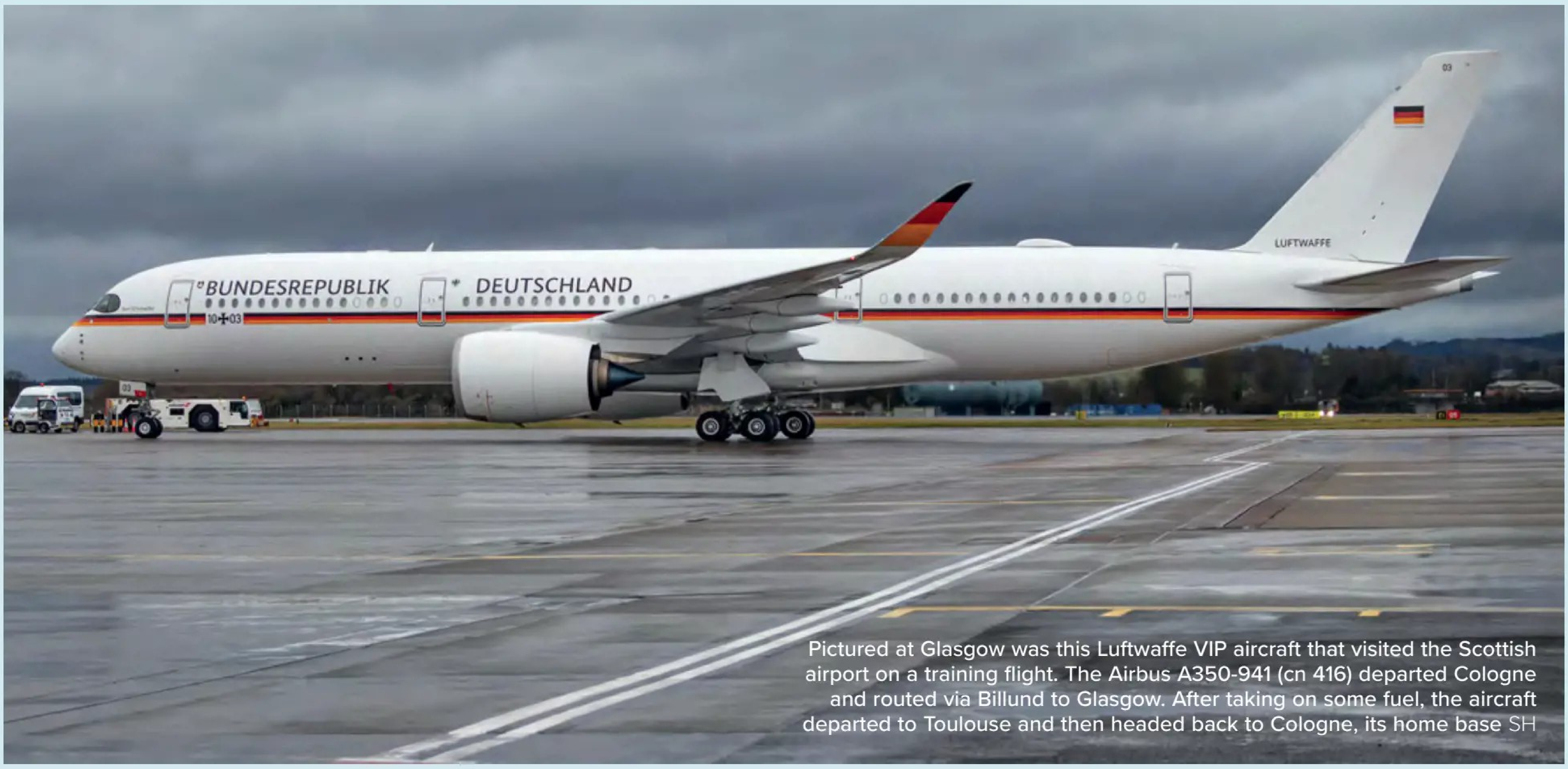
▲ USMC KC130J Reg QH 6473 Callsign RANGR16 arrived at Liverpool John Lennon Airport on February 10 from Bardufoss. It departed Liverpool John Lennon Airport on February 12 to Portsmouth Paul Convey

CONDORS
BD
4597


A US Navy Boeing P-8A Poseidon, 169554 LK VP-26, arrived at RAF Mildenhall on February 20, using the callsign Trident96, from Sigonella, Italy. Its visit is part of a planned temporary duty (TDY) Alexander Blackman


A 154th Wing Hawaii ANG KC-135R 63-8883/HH arrived on February 21 as Reach 898 and departed the following day Peter Foster

HH
8883
U.S. AIR FORCE


BUNDESREPUBLIK DEUTSCHLAND
10+03
LUFTWAFFE

Pictured at Glasgow was this Luftwaffe VIP aircraft that visited the Scottish airport on a training flight. The Airbus A350-941 (cn 416) departed Cologne and routed via Billund to Glasgow. After taking on some fuel, the aircraft departed to Toulouse and then headed back to Cologne, its home base SH

G-MEDY arriving at Biggin Hill.
SkyCare UK

The latest changes on the UK, Irish, Isle of Man and Guernsey registers

RESTORATIONS

REG'N	MODE(S)	TYPE	C/N	OWNER
G-CHOZ	40581C	Rolladen-Schneider LS6-18W	6353	JC Thurbridge, (Brighton, West Sussex)
G-CLZG	407A97	Schempp-Hirth Ventus 3T	123 TS	GR Glazebrook, Dunstable, Bedfordshire

NEW REGISTRATIONS

REG'N	MODE(S)	TYPE	C/N	OWNER
G-CMNM	407F3B	Diamond P-70	DB-SN-020	AM Holly, (Breadstone, Gloucestershire)
G-CMOK	407F3D	Diamond P-90	DB-SN-008	AM Holly, (Breadstone, Gloucestershire)
G-CMUF	408104	Diamond S-105	DB-SN-015	AM Holly, (Breadstone, Gloucestershire)
G-CMVL	408190	Apollo Exodus Deltajet 500 Stingray (assembled by Flylight Airsports Ltd)	EA 024	Kent County Scout Council, (Sandling, Kent)
G-CMWP	4081E3	Glaser-Dirks DG-400	4-289	APL Binks, Husbands Bosworth, Leicestershire
G-CMXR	408240	Cameron Sport-80	12618	Cameron Balloons Ltd, Bristol, City of Bristol
G-CMYV	404F6C	Van's RV-8 (built by DF Sargant)	PFA 303-14521	KW Baker & DE James, Eshott, Northumberland
G-CMYY	4081C8	Apollo Exodus Deltajet 500 Stingray (assembled by Flylight Airsports Ltd)	EA 026	P Szymanski, East Fortune, East Lothian
G-EPEE	408239	Skyleader JA-400 Skyleader 400 (built by Air Operation Technologies a.s.)	4 356 400 D	R Engelhard, North Weald, Essex
G-FCAT	408C07	Zenair CH.750 Cruzer (built by DA Karniewicz)	LAA 381-15722	MA Potter, (Sticklepath, Devon)
G-JIMX	408241	Flylight Skyranger Nynja 912S(1)	BMAA/HB/768	J & RJ Henderson, Perth, Perth & Kinross
G-JNDY	408246	Game Composites GB1 Gamebird	0077	Skydance Aviation Ltd, Perth, Perth & Kinross
G-KALE	408238	Diamond DA62	62.313	G-KALE Aviation Ltd, Isle of Man
G-LEEK	40824E	Hughes 369D	1090552D	LPJ Aviation Ltd, (Elson, Shropshire)
G-LENO	4081B7	Apollo Exodus Deltajet 500 Stingray (assembled by Flylight Airsports Ltd)	EA 027	C Fender East Fortune, East Lothian
G-MACZ	408127	Boeing 767-25E(BDSF)	27195	Maersk Air Cargo UK Ltd, East Midlands, Leicestershire
G-MEDY	408186	Pilatus PC-12/47E	2437	Oriens Aviation Ltd, Biggin Hill, Greater London

G-MREL	408220	AutoGyro Cavalon (assembled by Autogyro Certification Ltd)	RSUK-V00619	MR Love, Popham, Hampshire
G-OHSB	408249	Sikorsky S-92A	920149	Offshore Helicopter Services UK Ltd, Aberdeen International, Aberdeenshire
G-SHWE	408250	Chadwick GAC/NLH 56K 12G	01/GAC/NLH	GA & I Chadwick (Horsham, West Sussex & Caterham, Surrey)
G-SVNN	408245	Cirrus SR22	10214	AASCO Air LLP, Coventry, Warwickshire
G-TGRX	40491C	Robinson R44 Raven	1194	Tiger Aviation Ltd, Shobdon, Herefordshire
G-TUOA	407FAD	Boeing 737-8	44635	TUI Airways Ltd trading as TUI, London Luton, Bedfordshire (NB)
G-UZEF	408181	Airbus A320-251N (assembled by Airbus Tianjin)	12383	Easyjet Airline Company Ltd, London Luton, Bedfordshire (NB)
G-VJTA	408223	Cessna 560XL Citation XLS+	560-6165	Saxonair Charters Ltd, Norwich International, Norfolk (NB)
G-VNEA	408217	Tecnam P-Mentor	1132	VNE Group Ltd, Leeds Bradford, North Yorkshire
G-VNEB	408218	Tecnam P-Mentor	1133	VNE Group Ltd, Leeds Bradford, North Yorkshire
G-WNDF	408252	Windracers ULTRA-UAS	Mk2-024	Windracers Ltd, (Southampton, Hampshire)
G-XMNE	40822F	Airofly Aion (built by C Evans)	AM01	Airofly VTOL Ltd, (Garstang, Lancashire)
EI-GVL	4CAF06	Cessna 172S Skyhawk SP	172S10744	Waterford Aero Club Ltd, Waterford, Co. Waterford
EI-HHB	TBA	Raj Hamsa X'Air 582(8) (built by JC Harris)	BMAA/HB/140	Private Individual, (Co. Tipperary)
EI-HOY	TBA	Comco Ikarus C42B	0703-6875	Private Individual, (Co. Mayo)
EI-HRF	TBA	Boeing 737-86J(BDSF)	30879	ASL Airlines (Ireland) Ltd, Dublin, Co. Fingal (NB)
EI-IKP	4CAE98	Boeing 737-8200	67113	Ryanair DAC, Dublin, Co. Fingal (NB)
EI-IRS	TBA	Leonardo AW189	89027	Bristow Ireland Ltd, Shannon, Co. Clare (NB)
EI-KFD	4CAEBD	Airbus A320-271N	12272	Avolon Leasing Ireland 3 Ltd (operated by FlyArystan, Almaty, Kazakhstan)
EI-KID	4CAEEA	Airbus A320-271N	12360	Avolon Leasing Ireland 3 Ltd (operated by Air Astana, Almaty, Kazakhstan)
EI-PIN	Not Allotted	ITV Piper-27.5	2K21-A-PIPER-27.5-004	Private Individual, (Co. Wexford)
M-ABRL	424C27	ATR-72-212A	1152	Billund Leasing V Ltd, (stored Toulouse-Francazal, France)
M-ABSZ	424C8B	Airbus A320-216	2612	Horizon II Aviation 1 Ltd, (stored Hosur, India)
M-JCBA	424C79	Leonardo AW139	32068	JC Bamford Excavators Ltd, East Midlands, Leicestershire
M-JCBB	424C78	Leonardo AW139	32075	JC Bamford Excavators Ltd, East Midlands, Leicestershire
M-TATI	424C82	Embraer EMB-135ER	145376	Lorizon Invest SAS, (stored Vilnius, Lithuania)
2-MSPI	TBA	Eurocopter EC225LP Super Puma 2+	2868	Airbus Helicopters SAS, Marseille Marginane, France (NB)
2-PBMY	TBA	Hawker 1000	259049	Beunghar Ltd, Larnaca, Cyprus
2-SLOW	TBA	AgustaWestland AW109SP Grand New	22101	Volare Aviation GSY Ltd, Oxford, Oxfordshire
2-SMBC	TBA	Airbus A320-232	4496	Banat Aviation Leasing Ltd (for South African Airways)

CANCELLATIONS

REG'N	**MODE(S)**	**TYPE**	**C/N**	**OWNER**
G-AWBS	Piper PA-28-140 Cherokee	28-24331	Cancelled as Destroyed (On departure from Eddsfield Airfield, East Yorkshire 18.06.24 hit the tree line on the end of runway 09 and came to rest in the garden of a house in Seamer Road, Octon, just North of the climb out)	
G-BIYU	Fokker S11-1 Instructor	6206	To Netherlands as PH-DRO	
G-BOCM	Slingsby T67C	2036	Cancelled as Permanently WFU (CofA expired 23.07.10, Last reported at Leicester 2020)	
G-BSUO	Scheibe SF25C Falke 2000	44501	Cancelled as Permanently WFU (CofA expired 02.11.20)	
G-BUPR	Jodel D18	PFA 169-11289	Cancelled as Destroyed (Substantially damaged when overturned on landing at Heveningham Hall, Suffolk 30.06.24)	
G-CBGZ	Westland SA341C Gazelle HT.Mk.2	1915/1923	To USA as N62GZ	
G-CBOE	Hawker Hurricane Iib	R30040	To Germany (NB on display at DAS Fliegende Museum, Aalen-Elchingen, Germany as 'AG244')	
G-CCIU	Cameron N-105	10485	To Netherlands as PH-ELV	

PREVIOUS IDENTITIES

Reg'n	**Previous Identity**
G-CMYV	ex G-LUDM
G-FCAT	ex G-CLYN
G-JNDY	ex N277GB
G-LEEX	ex 206 Israeli Defence Force
G-MACZ	ex OY-SRJ
G-MEDY	ex HB-FRK
G-OHSB	ex N928PH
G-SVNN	ex N2142B
G-TGRX	ex G-TOLS
G-TUOA	ex N4022T
G-UZEF	ex B-005J
G-VJTA	ex D-CAHO
EI-GVL	ex OE-DWW
EI-HHB	ex G-BZEU
EI-HOY	ex D-MLVL
EI-HRF	ex VP-CII
EI-IKP	ex N4022T
EI-IRS	ex I-EASN
EI-KFD	ex F-WWDJ
EI-KID	ex F-WWBX
M-ABRL	ex PK-GAF
M-ABSZ	ex VT-HYD
M-JCBA	ex I-RAIF
M-JCBB	ex I-RAII
M-TATI	ex M-ABTC
2-MSPI	ex 9M-SPI
2-PBMY	ex VP-BMY
2-SLOW	ex OE-XNB
2-SMBC	ex A7-AHF

Airbus A330-343, 2-STBA making its last ever landing at Manchester on April 25, 2023.
Charles Cunliffe

G-CFLS	Schleicher Ka.6CR Rhönsegler	6180	Cancelled by CAA (CofA expired 06.05.19, Last reported at RAF Halton, Buckinghamshire 05.19)
G-CFTG	P & M QuikR	8414	To Belgium
G-CFZL	Schleicher ASW 20CL	20764	Cancelled by CAA (CofA expired 15.07.21, Last reported stored at Baileys Farm, Long Crendon, Buckinghamshire 12.21)
G-CGWO	Tecnam P2002-JF	168	To Netherlands as PH-EPT
G-CKRI	Schleicher ASW 21	21835	Cancelled by CAA (CofA expired 31.07.21, Last reported stored at Baileys Farm, Long Crendon, Buckinghamshire 12.21)
G-CKWD	Boeing 787-9	38789	To Norway as LN-FNE
G-CLXT	ATR-72-212(F)	446	To Spain as EC-JRP
G-CLYN	Zenair CH750	LAA 381-15722	Re-registered as G-FCAT
G-CLYX	AutoGyro MTOSport 2017	RSUK/MTO2/014	Cancelled as Permanently WFU (no Permit to Fly issued, believed not imported)
G-CMOE	Diamond DA50C	50.C.A.A.048	To USA as N281PA
G-CMPK	Airbus BK 117 D-3	21276	To Cayman Islands as VP-CLP
G-CMPS	Airbus BK 117 D-3	21285	To Cayman Islands as VP-CLR
G-DDHE	Slingsby T53B	1718	Cancelled as Permanently WFU (CofA expired 09.11.21. To recycling plant at Shore Road, Perth 06.24)
G-EHMS	MD Helicopter MD900 Explorer	900-00068	To Austria

G-ENAA	SAC Spitfire Mk.26B	LAA 324-15097	Cancelled as Destroyed (crashed on take-off from Enstone, Oxfordshire 28.07.24)
G-HITE	Airbus AS350B3 Ecureuil	9616	To Australia as VH-KFT
G-ILLE	Boeing E75 Kaydet (modified)	75-5058	To USA
G-INII	Pitts S-1 Special	515H	Cancelled by CAA (Permit to Fly expired 12.07.12, last reported at Sleap 08.20
G-JKAT	Robinson R22 Beta	0566	Cancelled as Destroyed (substantially damaged when collided with an antenna at Gloucestershire Airport 20.06.24
G-LADD	Enstrom 480	5037	To France
G-LFSB	Piper PA-38-112 Tomahawk	38-78A0072	Cancelled by CAA (CofA expired 22.11.14)
G-LSAE	Boeing 757-27B	24135	Cancelled as Permanently WFU (CofA expires 11.09.25. to St Athan, Vale of Glamorgan 02.01.25 for parting out)
G-LSAI	Boeing 757-21B	24016	Cancelled as Permanently WFU (CofA expires 30.09.25. to St Athan, Vale of Glamorgan 08.01.25 for parting out)
G-LSAK	Boeing 757-23N	27973	Cancelled as Permanently WFU (CofA expires 24.05.25. to St Athan, Vale of Glamorgan 06.01.25 for parting out)
G-LUDM	Van's RV-8	PFA 303-14521	Re-registered as G-CMYV
G-MVUG	Solar Wings Pegasus XL-Q	SW-WQ-0214	Cancelled by CAA (Permit to Fly expired 01.07.17)
G-MWRC	Mainair Gemini Flash IIA	620-0191-7-W614	To Lithuania

G-MZHP	Pegasus Quantum 15 (Modified)	7353	Cancelled by CAA (SSDR microlight so no Permit to Fly required)
G-OEZY	Europa Aviation Europa	PFA 247-12590	Cancelled by CAA (Permit to Fly expired 20.11.13)
G-OJBS	Cameron N-105	4733	To Lithuania
G-PFTB	Tecnam P2008-JC	1240	To Spain as EC-ONL
G-PFTC	Tecnam P2008-JC	1241	To Spain as EC-ONM
G-PFTE	Tecnam P2008-JC	1243	To Spain as EC-ONO
G-SAJB	Embraer EMB-135ER	145473	Cancelled as Destroyed (CofA expired 22.07.21, parted out at Aberdeen, Aberdeenshire 09.24)
G-SAJO	Embraer EMB-145MP	145216	Cancelled as Destroyed (CofA expired 22.12.24, parted out at Bournemouth, Dorset 07.24)
G-TOLS	Robinson R44 Raven	1194	Re-registered as G-TGRX
G-WILI	Piper PA-32R-301 Saratoga SP	3213004	To USA as N699GW
G-WNGM	Pilatus PC-12/47E	1609	To Antigua
G-WORM	Thruster T600N 450 Sprint	9109-T600N-039	Cancelled as Destroyed (Permit to Fly expired 16.04.24)
EI-CVB	Airbus A30-214	1394	Cancelled at Owner's request – Removed from Service (to St Athan, Vale of Glamorgan for parting out 06.11.24)
EI-DZN	Bell 222	47071	Cancelled at Owner's request – Removed from Service
EI-FPB	Bombardier CRJ-900LR	15399	To USA as N636NN
EI-HML	Tomark Viper SD-4 RTC	41130	To Poland
EI-HNY	Airbus A320-271N	8492	To Peoples Republic of China (stored at Haiku International)
EI-KHB	Embraer 190-300	19020013	To Jordan as JY-REZ
EI-STC	Boeing 737-476(SF)	24446	To The Gambia C5-STC
EI-STN	Boeing 737-4Q8(SF)	25106	To USA as N106YZ
EI-XLG	Boeing 747-446	29899	Cancelled at owner's Request – Removed from Service (NB actually became RA-73287)
M-ABSA	Airbus A320-214	4438	To India as VT-IWY
M-ABTC	Embraer EMB-135LR	145376	Re-registered as M-TATI
M-YFFC	Leonardo AW109SP Grand New	22448	To Turkey
2-CAKH	Eurocopter EC225LP Super Puma 2+	2878	To Italy as I-WNDM
2-GGGG	Bombardier Challenger 605	5748	To San Marino as T7-POL
2-NAPA	Hawker 800XP	258779	To Turkey
2-SLOW	Bombardier Challenger 604	5422	Cancelled at Owner's Request (Crashed on landing at Heraklion, Greece 27.01.22)
2-SMBC	Airbus A320-232	4496	To South Africa as ZS-SZN
2-STBA	Airbus A330-343	1263	Cancelled as scrapped (slowly being parted out at Manchester, Greater Manchester)
G-STLD	Airbus A340-541	775	Cancelled at Owner's Request (To Taiyuan Wusu, Peoples Republic of China 27.12.24 for parting out)
2-SWIS	Bombardier Challenger 604	5463	To USA

UPDATES & CORRECTIONS

Reg'n	Details
G-AJHS	Became OO-FWI
G-AZVP	Became OK-CCC 12.09.24
G-BGCU	Type officially changed to a Slingsby T65-17L 28.01.25
G-BGRX	Became LZ-SSB
G-BZEU	Became EI-HHB 15.01.25
G-CBGG	Became 9M-ECD 09.24
G-CCLU	Type officially changed to a Skyranger Swift 912(1) 29.01.25
G-CKCC	Became OK-0009 24.09.24
G-CLEH	Type officially changed to an Aeroprakt A32-M 22.01.25
G-CLKW	Became C-FFZM
G-CMAZ	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-CMBZ	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-CMJE	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-CMLF	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-CMLH	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-CMRH	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-CMSD	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-CPAF	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-DBGB	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-DBOI	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-DDWT	Type officially changed to a Slingsby T65A 28.01.25
G-DDZN	Type officially changed to a Slingsby T65-17L 17.01.25
G-DECM	Type officially changed to a Slingsby T65-17L 17.01.25
G-EDMC	Became 9M-ECH 09.24
G-EDMK	Type officially changed to a Boeing A75L-300 08.01.25
G-KEGZ	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-LIFB	Type officially changed to an Aeroprakt A32-M 22.01.25
G-MZRM	Became 9M-ECE 09.24
G-OALI	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-OMIB	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-OTEA	Became OE-RIO
G-PFTD	Became EC-ONN
G-REGO	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-RYIX	Became TC-MSO
G-SALE	Became OE-SAE
G-SILY	Became 9M-ECF 09.24
G-SPRY	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-UNGY	Manufacturer officially changed to Diamond Hot Air Ballooning Ltd 16.01.25
G-ZAST	Became OE-AME (NB actually cancelled to Germany 14.04.23)
EI-GLA	Became OK-9966 18.10.24
EI-IME	Became LY-FAC 16.01.25
EI-RCA	Became 9A-UAO 01.25
M-ALTI	Became UP-C6004
M-JAFR	Became 146/F-RAFS French Air Force
M-WHIZ	Became I-SEAF
2-AECE	Became N314FT
2-NNOO	Became PK-GUG

Key: NB – Nominal Base. A place name in brackets relates to the owner's address, as where the aircraft is based is unknown.

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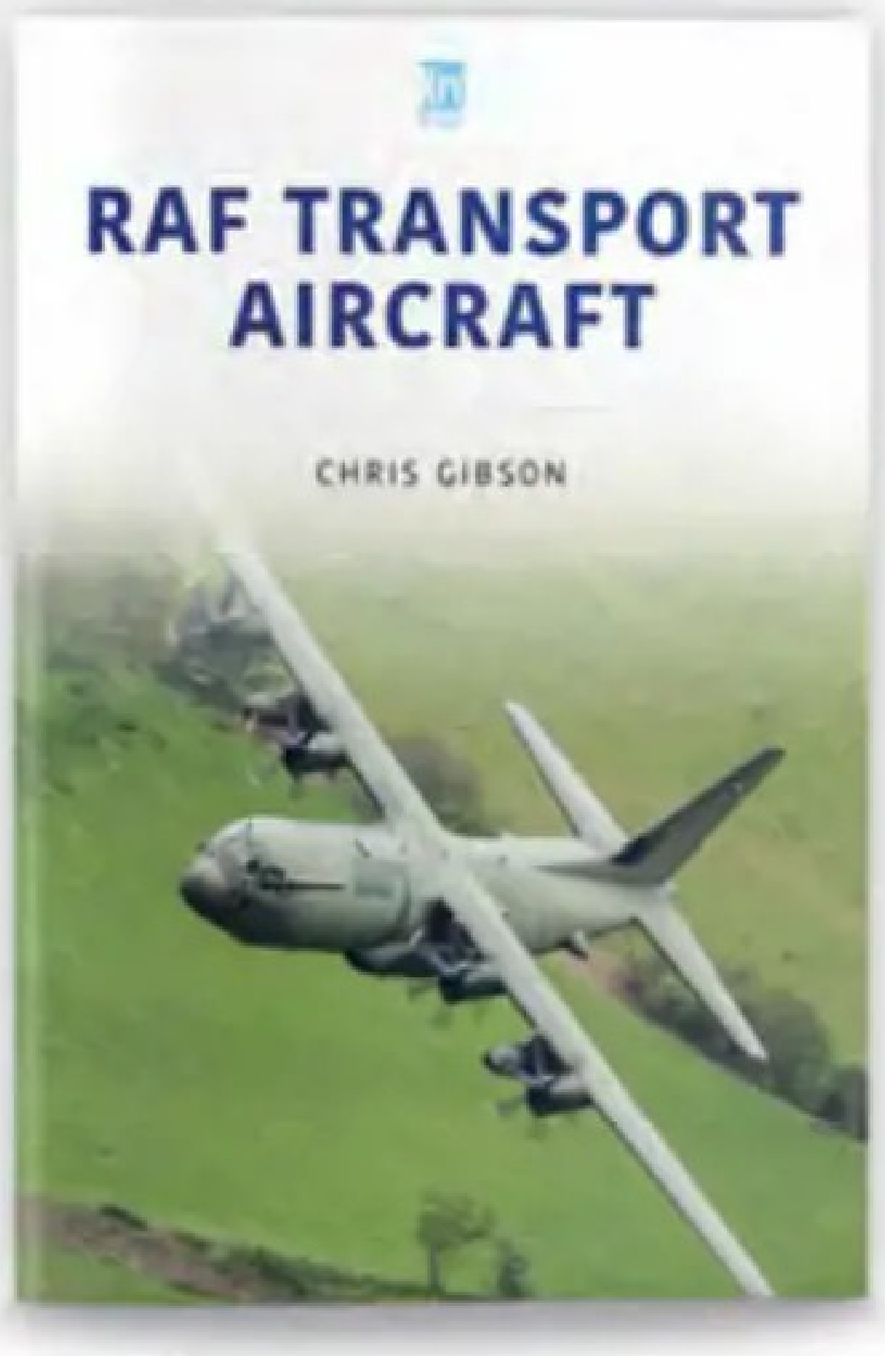
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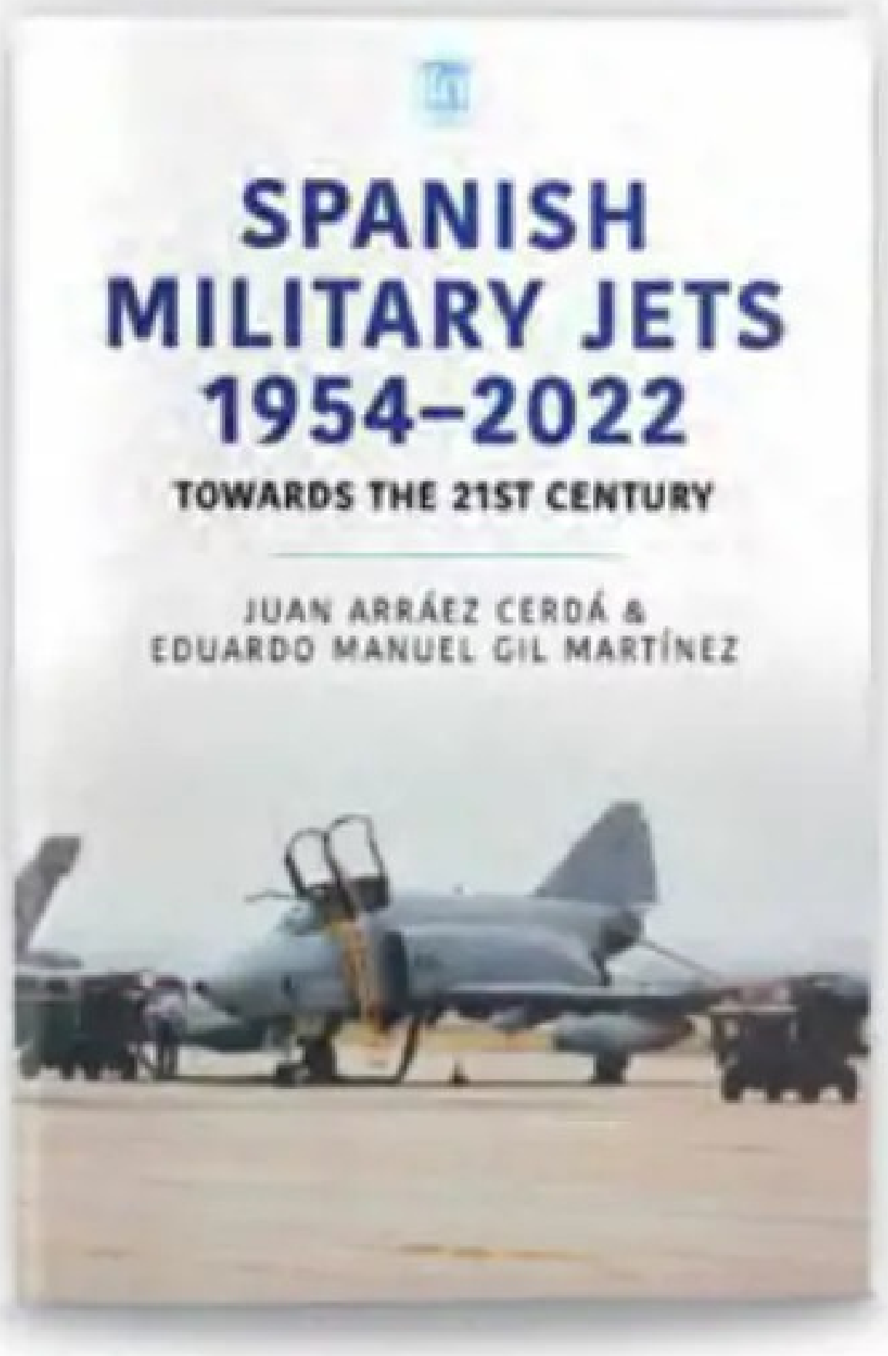
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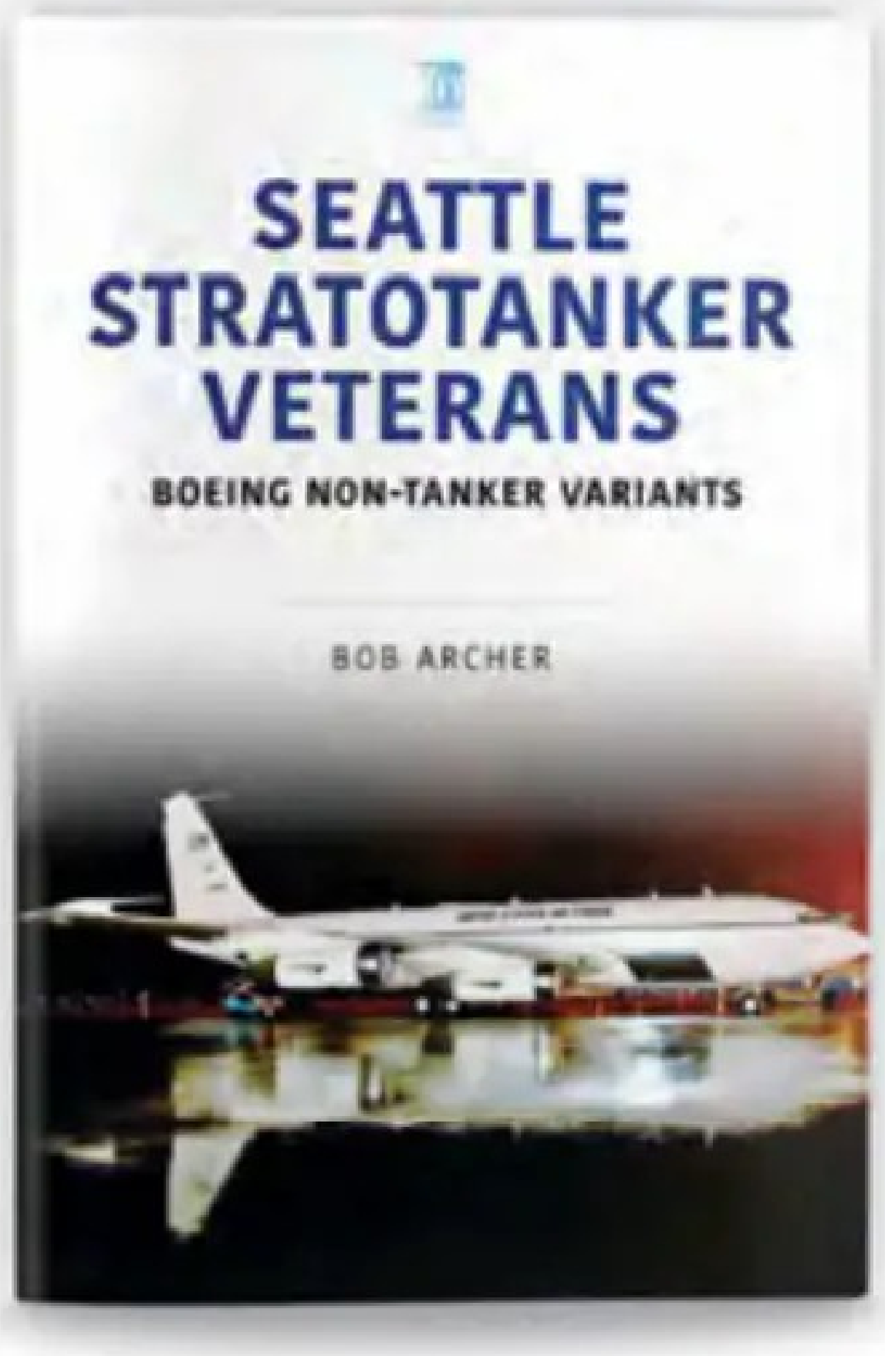
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Flying to the RIGS

▲ **Passengers waiting in line to hop on their shuttle to one of the platforms via an NHV H175.** All images, Fly High Aeromedia

The NHV, noticeable by its bright yellow helicopters, plays a crucial role in the offshore helicopter transport industry, particularly in the North Sea. Fly High Aeromedia's **Roelof-Jan Gort** and **Björn van der** Flier visited the company's operation at Esbjerg, Denmark, and spoke with base manager Gitte Eriksen, pilot Janne Dethlefsen and head of maintenance Steve McNeill

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PROTECTION

Esbjerg Airport, on Denmark's west coast, has long been a key aviation and transport hub. Among its notable operators is Noordzee Helikopters Vlaanderen (NHV). Founded in 1997 and headquartered in Belgium, NHV quickly became a trusted offshore transport provider, expanding across Europe and Africa. Initially serving the oil and gas industry, the company made Esbjerg Airport a key base due to its strategic location and modern facilities. While the airport dates to 1948, the offshore energy boom of the late 20th century transformed it into a vital logistics hub, with NHV playing a significant role in its development.

Expansion and challenges

As NHV expanded it replaced smaller helicopters with larger, advanced models to meet the growing demands of the offshore sector; key aircraft included the EC155, EC225 Super Puma, H175, AW139, AW169, H145 and AS365. The UK led the offshore flying industry by adopting flight safety concepts, promoting twin-engine helicopters and a two-crew system. However, countries such as Denmark lacked domestic manufacturers and depended on foreign OEMs.

The EC155 and AS365 became Denmark's first safety-enhanced offshore helicopters, with DanCopter, formed in 2003, taking over some Maersk contracts. The introduction of the EC225 in 2012 was a significant milestone, transporting up to 19 workers. Yet, the aircraft faced challenges: a crash in 2012 led to an industry-wide grounding, and a fatal 2016 incident at Bergen in Norway resulted in the EC225's removal from North Sea operations and the closure of several operators.

In 2015, NHV Group acquired DanCopter, beginning a new era for Denmark's offshore business. Post-EC225, all oil and gas customers rejected new helicopter models. NHV turned to the Airbus H175, which became the preferred choice due to its smaller cabin size and better fit for NHV's operations. Despite fewer seats, the H175 achieved nearly full

▲ H175 flying across the Danish shoreline ready to head out to the North Sea

▶ Base manager Gitte Erikson with one of her helicopters

occupancy. NHV's commitment to safety and quality earned numerous certifications, reflecting its high standards in maintenance and training, ensuring readiness for offshore challenges.

Operations at Esbjerg Airport

Esbjerg Airport is a key base for NHV, supporting offshore personnel and equipment transport, including wind energy services in the North Sea. Its proximity to major oil and gas fields makes it ideal for NHV's passenger, cargo and training operations. NHV operates three H175 helicopters at Esbjerg, employing 36 staff: 14 pilots, 14 technicians and eight office personnel.

NHV's base manager Gitte Eriksen shared that NHV's selection for Danish oil and gas operations was based on its competitive tender bid, where it prioritised delivering a high-quality product, maintaining a strong safety policy and offering competitive pricing. She said: "We assess the best helicopter type based on the customer's needs – flight distance, passenger count – and aim to offer the best value in terms of price, payload and flight time."

EASA approval

In March 2024, NHV Group's Danish entity became the first North Sea operator approved by the European Union Aviation Safety Agency (EASA) to conduct "Operations with Operational Credits – Helicopter Special Authorization Category I (Heli Sa Cat I) Operations". This enhances operational flexibility by increasing the number of accessible alternate locations within the fuel range, allowing the NHV to continue flights when competitors are grounded, improving service for customers.

Key components of Heli Sa Cat 1 include safety management systems, pilot training, maintenance standards and operational procedures. The approval offers several operational advantages over standard regulations, such as reduced minimum visibility from 550m to 300m; the ability to descend to 150ft using the Instrument Landing System (ILS) or to 130ft when Low Visibility Procedures (LVP) are available, compared with the usual minimum descent altitude of 200ft and, finally, lower weather requirements for alternate airfields, with visibility reduced from 1,000m to 600m, and cloud ceilings lowered from 400ft to 300ft, improving operational days and payload capacity.

To obtain this approval, NHV utilised helicopters equipped with a four-axis autopilot with automatic level-off, a feature in all H175 helicopters. Pilots underwent both theoretical and practical simulator training, completed during recent sessions in Marseilles, to meet the necessary requirements.

Training programmes

NHV places strong emphasis on pilot training, adhering to EASA's high standards. The

▶ One of the company's H175s lining up onto the Esbjerg runway ready for departure comprehensive training includes simulator sessions, emergency response drills and ongoing evaluations to ensure pilots are skilled in both helicopter operation and handling unexpected situations. Base manager Eriksen said: "We conduct all training in-house and at Airbus Helicopters in Marseilles. Pilots must meet simulator hour requirements and customer-specific flying hours before being permitted to fly. New pilots begin with classroom instruction, followed by simulator training. If successful, they proceed to helicopter flight training with a line trainer for up to two weeks.

"After completing three weeks of classroom training, two weeks in the simulator and seven to 14 days of flight training, they are ready to serve as co-pilots. However, they can only fly alongside experienced captains." This rigorous process ensures pilots are well prepared for real-world challenges.

Pilot experiences

Janne Dethlefsen, a 32-year-old co-pilot with approximately 1,400 flight hours, shared her journey and experiences in the aviation industry. She began her training at Esbjerg Airport on the R22, pursuing a modular path that allowed her to work while gaining her PPL (private pilot licence). She completed her ATPL (air transport) at Billund Air Center and returned to Esbjerg to finish her CPL (commercial licence) on the R44. Afterwards, she focused on sightseeing flights for five years, aiming for her dream of flying offshore, although she needed more hours. She obtained her IR and FI (instrument rating and flight instructor qualifications) before starting training on the H175 with Babcock in 2021. She flew with Babcock and CHC until 2023 when she transitioned to NHV, where she continues to fly the H175.

Janne chose the NHV because it uses the same H175 model she was already rated for, and she had heard positive reviews about the company. She works there as a co-pilot, flying offshore to oil and gas platforms. Much teamwork is involved in each flight, working closely with the pilot in command to ensure safe operations. Typically, Janne flies around 600 hours annually on the H175, conducting pre-flight checks, reviewing weather information and preparing for each flight. The aircraft can carry up to 16 passengers with a maximum payload of 2,028kg, though this depends on weather conditions and other factors.

▲ The modern and clean flight deck of the H175; all the switches are within a hand's reach on the centre pedestal

◀ Janne Dethlefsen after finishing her cockpit preflight checks, ready to go

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▼ Night ops on the Esbjerg runway

One of the NHV's technicians inspect the main rotor to make sure the aircraft is in tip-top shape

The H175 is noted for its comfort and advanced features, including high automation, low vibration and excellent air conditioning, which provides comfort in both hot and cold climates. The autopilot system, with 'Auto Hover' and 'Auto Land' capabilities, enhances safety and precision. The aircraft's range of 650nm allows Janne and her crew to reach all the oil and gas installations in the North Sea.

Flying to offshore installations involves assessing risks before landing. Janne and her crew evaluate potential threats, such as wind direction, turbulence, exhaust gases or nearby vessels, and decide on countermeasures. She strives to maintain the highest level of skill and safety with each flight, ensuring that all risks are mitigated.

For offshore flights, NHV equips its helicopters with floats, which are armed during sea flights. These floats can be inflated if needed for an emergency water landing. All crew members undergo annual SIM (simulator) training, which includes ditching scenarios, both with and without engine power. Every third year, crew members practise helicopter evacuation procedures in water at RelyOn Nutec, simulating real-life emergencies with a submerged helicopter. Passengers also undergo this training before flying offshore to ensure their safety in the unpredictable weather conditions of the North Sea.

Night flying presents additional challenges, such as maintaining night vision, dealing with the autokinesis effect (the illusion of moving lights) and navigating false horizons. Janne said reliance on instruments and constant scanning helps mitigate these risks, especially when landing on offshore platforms with minimal lighting.

Maintenance and operational excellence

NHV's maintenance procedures exceed EASA's regulatory requirements, leveraging advanced technology and best practices to ensure aircraft safety and reliability. Operational protocols are regularly updated to meet the latest safety standards. Steve McNeil, NHV's chief of maintenance in Denmark, previously led maintenance in Africa for ten years. At the Esbjerg Airport base, NHV follows a progressive maintenance schedule based on flight hours and calendar time, covering inspections up to 800 hours. Engineers hold B1.3, B2 and C licences, allowing them to handle turbine engines, instrumentation and electronics and to oversee conformity to regulatory requirements. The maintenance schedule includes checks at ten, 50, 100, 150, 200, 280, 400, 600 and 800 flight hours. Despite operating up to seven days a week, the availability of helicopters for operational deployment remains above 85%, thanks to rigorous maintenance and handling of mixed defects.

NHV's strategic growth

In May 2023, NHV A/S secured a significant contract with TotalEnergies EP Denmark to support offshore operations in the Danish sector of the North Sea. From Esbjerg Airport, NHV deployed a dedicated H175 helicopter to transport personnel and equipment to TotalEnergies' installations in the Dan and Tyra fields. This marked a key step in NHV's growing involvement in the offshore oil and gas sector.

Normally, the helicopters land on the airport ramp, but when maintenance is required they land on the platforms next to the hangars

NHV
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▲ Head of maintenance Steve McNeil flanked by two NHV pilots

In July 2024, NHV further expanded its portfolio by securing a three-year contract with a possibility of further extensions with INEOS, with potential extensions. As base manager Eriksen explained, the company is responsible for daily crew changes, flying personnel offshore every day to the rigs: "Sometimes they need additional flights, especially during severe weather, and we ensure we support them."

Each day, NHV typically operates two to four flights for both INEOS and TotalEnergies. However, when weather delays occur, such as high waves or lightning, the company co-ordinates additional flights to catch up. "Each flight takes between two-and-a-half to four hours, and we need to plan carefully to ensure everything is operational. Our engineers also perform checks between flights," added Eriksen, emphasising the daily co-ordination that is required.

On any given day, NHV transports between two and 16 passengers per flight, with 12 to 16 passengers being typical. In some cases, if a single passenger's transport is essential, NHV accommodates the request. However, weather is the most significant factor influencing operations.

Prospects

As the global energy landscape evolves, NHV Group continues to adapt to new realities, including the increasing focus on renewable energy sources. The company is exploring opportunities in the offshore wind sector, which is gaining momentum in the North Sea. This shift aligns with global sustainability goals and promises to keep Esbjerg Airport at the forefront of aviation logistics in the region. AN

The authors would like to thank Jessicca Gordon and Delphine Demeyer of the NHV Group headquarters in Oostende and a special thanks goes to base manager Gitte Eriksen, co-pilot Janne Dethlefsen and chief maintenance officer Steve McNeil, and the people of Esbjerg Airport for making this article possible.

▶ The last passengers loaded, the door is closed ready for take-off from the oil rig in the North Sea

▼ A H175 waiting for its load of passengers at one of the oil rigs in the North Sea

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ESD 2
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Alarm

Next Month

Peter R March

Jose Salgueiro

RIAT Special

Ben Stanley Hall takes us down memory lane via a RIAT special, highlighting some of the visiting aircraft over the show's 40 years at RAF Fairford

80 Years of TAP

As Portugal's airline, Transportes Aéreos Portugueses (TAP) celebrates 80 years, José Salgueiro runs through the airline's history

At the Table: driving a super carrier

US Navy Captain Chris 'Chowdah' Hill tells us what it's like to lead a US Navy Aircraft Carrier during a tense deployment in the Red Sea

Rebirthing a superstar

Hamburg Airport recently welcomed a once common sight, not seen since the 1960s – one that screams elegance and performance, and the "Golden age of aviation". Jamie Ewan reports

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Get ready for a very special launch from us in April. And if our last one is anything to go by it'll prove momentous. The C1 Bel Canto, released in 2022, not only stunned the watchmaking establishment but also sold out in a matter of hours. It even won the 'Petite Aiguille' category at the Grand Prix d'Horlogerie de Genève (GPHG) awards in Switzerland – the 'Oscars' of watchmaking. As the first British brand to win a GPHG we're now officially recognised as designers and makers of the very highest calibre. What next? All will be revealed in April. Sign up now for more clues.

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